

EFFECTIVE SKILLS AND INTERPRETATIVE PERCEPTION OF RISK TAKING OF FUTURE TEACHERS IN LEARNING GYMNASTICS SITUATION

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Abstract

The purpose of the present study was to determine the current skills used by the future teachers and the contribution of these skills to determine the risk evaluation during the learning of gymnastics situations. Twenty six future teachers voluntarily participated in this study. They were sports-science students pursuing degrees in Exercise Science and Physical Education during the academic year 2012/2013. All Gymnastics learning situations are digitally video-filmed. The investigators attended and observed all the learning lessons for 10 weeks throughout the entire semester. The interesting finding of this study was that there are seven skills that are mostly used by the future teachers such as the choice of the learning situations, problems resolution, risk assessment, mastery of the rules of safety, application of security rules and responsibility taking. The results suggested as well that future physical education teachers showed great importance to Equipments' Management and Time and Space Management. Likewise, responsibility taking, Intervention /help, and Group management were the most determinant skills used during the future teachers' interventions.

Keywords: Skills, Physical Education, Observation, Intervention, Learning.

INTRODUCTION

Physical Education (PE) is one of the educational means, possibly the most enjoyable and most effective one when used properly to reach its objectives (Güne, 2007; Öztürk, 1998). Considering this, the teaching of gymnastics, which is one of the branches of PE and which is described as a physical activity performed on athletic equipments or on the floor with the aim of making people gain strength, power,

coordination, body control and flexibility, is vital in all PE classes. However, this activity requires a wide range of equipments which can lead to injury if not used correctly. It may also lead to injury in case the actions to be performed are not attempted sensibly. This diversity of elements requires different forms of education and raises questions for educational researches about the organization and systems of learning, and

consequently, about the methods that are used by teachers. In fact, in recent years, the injuries caused due to school physical education were increasing rapidly. These injury actions bring troubles to teachers, students and the families well (An, & Huang, 2012). Likewise, it has been revealed by researches concerning the field applications at schools that PE lesson, which have much importance at the individual's development, had been far away from the expected efficiency (Güray, 2002; Kangalgil & Dönmez, 2003; Karaku, 2005; Sungur, 2000; Tasmektepligil, Yılmaz, Mamolu, & Kılıçgil, 2006; Solmaz, 2006). So far, the most important target of today's educational system, when dealing with the teachers' learning situation, is the safety issue which is related to the lesson and the risk of injury that should be seriously taken into consideration. In fact, each activity taught in PE has its own safety regulations that children must be made aware of as confirmed by Capel (2002) who stated that, "... high quality organization, planning and management skills are required to ensure a purposeful, yet safe environment for children to practice new skills". Following this conclusion, all teachers are required to consider the risk assessments of the equipments and the environment they intend to use before the lesson begins because "Safety is arguably the most important factor in planning a PE lesson" (Capel, 2002). Since the pre-service teachers had inadequate knowledge of children's understanding and developmental levels, they were unable to anticipate how children learned the content and what types of learning tasks were more difficult or easier for children. Indeed, any presence of risk boosts research and safety construction. Analysis of teaching gymnastics' practices also shows that Physical Education and sports' teachers often choose a sanitized practice of Physical Activity and Sports "at risk". In fact, researchers like Kamba, Antoniou, Xanthi, Heikenfeld, Taxildaris, & Godolias (2004) show that the students involved in engines and which are originally of "driving insecurity" deficit feel more

vulnerable than others. Therefore, they are less likely to engage in motor action thus enclosing the vicious cycle of passivity and failure in the field of Physical education and sport. Goirand (1998) also showed the negative effects of a luxury passive safety in gymnastics when affirming that "bowing students 'are' locked in a business perspective without vertigo." That is why, teachers encourage stakeholders to "dare" to let students explore its limits (Baumann, 2001; Carrasco, 1997; Lapeyre, 1993). In fact, the teacher must try to trust his students and should "Not 'be' too protective or too lax" (Rollet & Usmer, 1994), while he also needs to ensure a climate of mutual trust within the class (Bruckmann & Recktenwald, 2003). Therefore, when thinking about the issue, the developments in the security context of the PE and sport should enable us to better design an appropriate content which would be useful in its design and implementation of education. However, there is a lack of academic work in this area, and studies that had been conducted had mainly focused on high performance aspects of the sport. There are few studies related to gymnastics that had focused on the different levels and methods of teaching and learning. Similarly, few studies considered the act of safety during the learning situation. Accordingly, the primarily aim of this research was to determine the current skills of future teachers and the contribution of these skills to the risk evaluation during the learning of gymnastics situations.

METHODS

The research protocol has combined two methodologies presented to participants during a learning Gymnastics Cycle composed of eight lessons of one-hour session of practice. During the experiment, the same researchers were present throughout the lessons. Future teachers were de-briefed about the goal of the study once all the experimental sessions were finished. During the Gymnastic cycle, the future teachers used the following learning items

in their instructions: (a) learning forward roll; (b) backward roll in rear; (c) handstand; (d) round off; and (f) the creation of gymnastics sequences including different element. During the field experiences, the future teachers used the same class level and taught eight educational gymnastics lessons.

The following mediums were used for data collection:

1. The aspects of the lesson planning and the intervention of the future teachers were based on a constructed evaluation grid that comprises: (1) Didactic Preparation (DP): which refers to the analysis of the activities and the different processes of knowledge transmission and the skills specific to a discipline and its acquisitions by the students, (2) Physical Preparation of Lesson (PPL): which refers to the construction and implementation of tasks or situations which would allow a better control of interventions and move towards a better adaptation of content, (3) Management of Work Areas (MWA): which refers to the choice of the organization and the distribution of activities in space, (4) Setting up Equipment (SE): it is setting up and putting away the equipment designed for the establishment of play spaces or hardware configuration of the workshop (the nature of the obstacle, the height, width, area and pulse reception ...), (5) Use the Rules of Safety (URS): which involves organizing the session, making the Parade, adjusting groups favouring child safety, giving instructions on safety rules and finally the (6) Objectives / Constraints to be respected (O/C): they involve setting objectives and analysing the social and material constraints responsible for the choice of sport and the physical activity. We made reference during the construction of the grid to "five generic properties" of risk situations defined by Cadet (2001).

2. Observing and assessing the skills used by teachers during the lessons by referring to the professional skills of teachers such as: Equipment Management (EM): which is the fact of putting away the equipment designed for the establishment of

the play spaces, Space Management (SM), Time Management (TM): which refers to the time spent for organization and transition actions, Group Management (GM): which deals with assigning students to play individually, per group or collectively according to the type of the task, Individualization of Instruction (II): which is implementing differentiated instruction on joint learning for all students based on objectives, Correction (C), Safety (S).

Observation allowed us to perceive the possible difference between the content analysis of the educational record of the session itself as well as the security taken at risk.

Process of Analysis of Observations

All Gymnastics learning situations are digitally-video filmed. All teachers' intervention sequences are recorded. The investigators had no prior relation with the participants. The investigators started this observation when the future teachers began their teaching in gymnastic cycle. The investigators attended and observed all learning lessons for 10 weeks throughout the entire semester. During the learning lessons, the investigators observed future teachers in individual and separate sessions throughout the Gymnastic cycle. The investigators took field notes while observing the future teachers.

In each filmed session, we primarily tried to identify the types of interventions and skills utilized by the teachers that we presented below. Indeed, the focus is on the choice of the use of active and passive safety, the intervention time and ability to help and prepare the students for the learning situations. Accordingly, our main purpose was to characterize a typical profile of future Tunisian teachers.

Individual Evaluation Forms

The individual Evaluation Forms were prepared for individual interventions to evaluate pre-lesson preparations and lesson interventions of the experiment future teachers who took part in this research

experiment. This individual Evaluation Form was constructed by observing teaching lesson before the experiment. This observation allowed us to construct the individual Evaluation parameters which were also relying on the given literature [the "five generic properties" risk situations defined by Cadet (2001)]. Each form has different evaluation parameters specifically related to that intervention. So, a four point scale (1=not at all; 4=very much so) was used. The evaluation of each future teacher was recorded and afterwards was graded by the evaluators who were involved in the research experiment. Thus, overall scores that future teachers received from each activity evaluation were counted.

Observing and evaluating pre-lessons' preparations and lessons' interventions of the experiment future teachers is assessed via the teachers' professional skills such as: the Choice of Learning Situations (CLS), Solving Problem (SP), Risk Assessment (RA), Mastery of the Discipline (MD), Mastery of the Rules of Safety (MRS), Applying the Security Rules (ASR) and Taking Responsibility (TR).

Twenty six future teachers (age 22.8 ± 1.2 years; mass 78.5 ± 5.7 kg; height 178.8 ± 9.3 cm) voluntarily participated in the study. They were sports science students

pursuing degrees in Exercise Science and Physical Education during the academic year 2012/2013.

To access the student populations in physical education and sport schools, we contacted the school counsellors. They have played the role of "research associates" in organizing the collection of data from their students. The phase of data collection took place during the gymnastics cycle from January to March 2013. No information about the purposes of the study was given to the participants until after they completed the experiment.

The step wise regression was established between correlated variables. Statistical analyses were compiled onto Excel spreadsheets and were performed using the software package SPSS version 16.0 (SPSS Inc., Chicago, IL, USA).

RESULTS

The aspects of planning lessons and future teachers' intervention

The findings suggested that future physical education teachers caring showed great importance to The Sitting up Equipment as compared with the other components of the lesson (Figure 1).

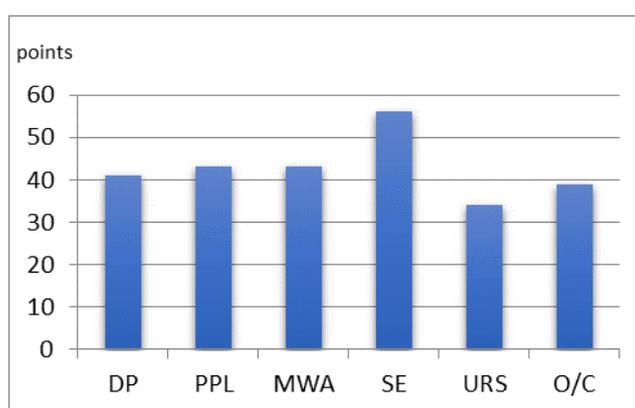


Figure 1. *The analysis of the content of the lesson and future teachers' intervention.*

**(DP) Didactic Preparation; (PPL) Physical Preparation of Lesson; (MWA) Management of Work Areas; (SE) Sitting up Equipment; (URS) Use the Rules of Safety; (O/C) Objectives / Constraints to be respected.*

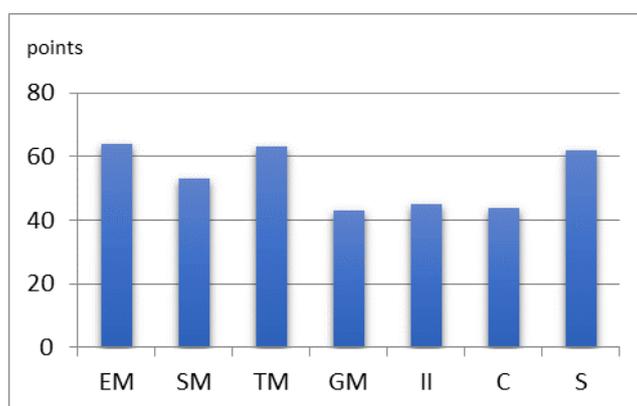


Figure 2. The skills used by teachers during the lessons.

* (EM) Equipment Management; (SM) Space Management; (TM) Time Management; (GM) Group Management; (II) Individualization of Instruction; (C) Correction; (S) Safety.

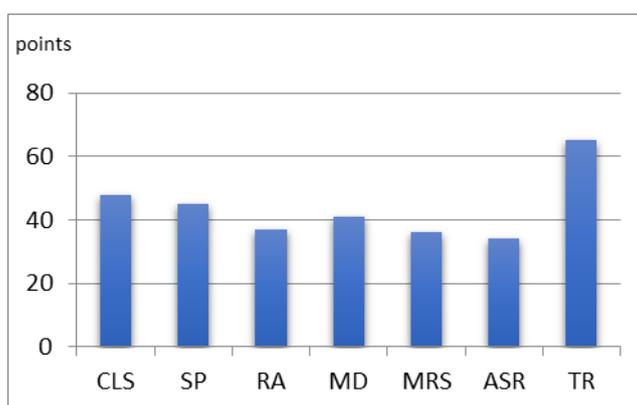


Figure 3. The most skills used by the future teacher during gymnastics learning situations.

* (CLS) choice of Learning Situations; (SP) Solving Problem; (RA) Risk Assessment; (MD) Mastery of the Discipline; (MRS) mastery of the rules of safety; (ASR) Apply the Security Rules; (TR) Taking Responsibility.

Table 1. The effective skills during lessons interventions.

Model	A	SE	Beta	t	Sig.
Constant	8.03	0.85	-	9.46	0.000
SM	0.96	0.31	0.48	3.08	0.005
TM	0.87	0.29	0.46	2.93	0.007

a. Dependent Variable: global assessment skills.

*(SM) Space management; (TM) Time management.

Table 2. *The factors that contribute to the determination of the teacher's competence.*

Model	A	SE	Beta	t	Sig.
Constant	0.00	0.00	-	-	-
MD	1.00	0.00	0.36	-	-
URS	1.00	0.00	0.33	-	-
PS	1.00	0.00	0.32	-	-
MRS	1.00	0.00	0.35	-	-
RA	1.00	0.00	0.36	-	-
CLS	1.00	0.00	0.48	-	-
TR	1.00	0.00	0.36	-	-

a. Dependent Variable: Total teachers 'skills.

**(MD) Master Discipline; (URS) Uses the Rules of Safety; (PS) Problem-Solving; (MRS) Mastering the Rules of Safety; (RA) Risk Assessment; (CLS) Choice of Learning Situations; (TR) Taking Responsibility.*

Table 3. *The main skills in making safety in learning gymnastics situations.*

Model	A	SE	Beta	t	Sig.
Constant	8.14	1.14	-	7.09	0.000
TR	1.40	0.44	0.51	3.17	0.004
I/H	-0.66	0.22	-0.49	-2.93	0.008
GM	0.78	0.34	0.37	2.29	0.032

a. Dependent Variable: teachers 'competence.

**(TR) Taking responsibility; (I/H) Intervention / Help; (GM) group Management.*

Concerning the skills used by teachers during the lessons, the future teachers provided more salient responses regarding their conceptions of safety when preparing their Gymnastics lessons respectively; Equipment's Management 64 points, Time Management 63 points and Safety 62 points. So, using adequate PE equipments and facilities was associated with future teachers' opportunities for more safety activity during physical education (Figure 2).

The effective skills during lessons interventions

According to Table 1, the regression of the overall score of the competence of the different variables shows that this score was determined by the space and time management. Furthermore, the score of the future teachers and the realization of pedagogical situations are based primarily on these two skills.

The factors that contributed to the determination of the teacher's competence

The results indicated that the factors mentioned above contributed to the determination of the teacher's competence and each one contributes according to its regression coefficient. Indeed, step wise regression which can also be expressed in the form of an equation leads to predict the score of the competence of the future teachers (table2).

The major skills ensuring safety in learning gymnastics situations

According to the table 3, the results indicated that responsibility taking, Intervention /help, and Group management were the most common skills used by the future teachers. In fact, we deduce that, these skills were effective for teaching and they are key skills in ensuring safety in learning gymnastics situations.

The teaching episodes indicated that the future teachers intentionally used the types of interventions in their lesson for example:

- We must install the equipment before starting
- Push with your hands.
- Stay tucked, especially tuck your head.

The most common skills used by the future teachers during gymnastics learning situations

Figure 3 illustrates that most of the future teachers were using the Taking Responsibility skill. There was a great consistency between the results of the skills' factors. So, we noted that "taking responsibility" was considered as the most effective skill that characterized the future teachers. However, the findings showed that the "choice of learning situation" and "solving problem" skills were almost similar.

DISCUSSION

The primary aim of this research was to determine the actual skills of future teachers and the contribution of these skills to risk evaluation during the learning of gymnastics situations. The findings of this research indicated that physical education teachers are presented with numerous opportunities to show they care for their students such as Equipments' Management, Time Space Management and Space Management. Adedeji (2000) also pointed out that there must be sufficient motivation in the form of attractiveness of facilities, supplies and equipment to captivate the athletes' interest to participate in sports or physical education.

Moreover, statistical analysis allows us to rank these skills according to their coefficient and their contribution to the gymnastics lesson. Hence, there are seven skills that are mostly used by future teachers such as the choice of learning situations, solving problem, risk assessment, mastery of the rules of safety, applying the security rules and taking responsibility. These skills are essential in the practical preparation of the lesson and are inherent to the specific

motor, the risk-taking and the Security Management.

In this study, not all teachers or their skills were perceived in a positive manner. In fact, future teachers didn't accord much importance to the Group Management, Individualization of Instruction and Correction. Accordingly, safety is arguably the most important factor in your planning. In all PE lessons the safety of pupils and hence of the environment and the equipment must be of a paramount importance. All activities taught in PE have their own safety regulations of which pupils must be made aware of BAALPE (1995).

Likewise, while observing and evaluating pre-lessons' preparations and lessons interventions of the experiment future teachers we noted that future teachers had recorded high scores at Take Responsibility skill. Nevertheless, Risk Assessment (RA), Mastery of the Rules of Safety (MRS), while taking into account the PE teachers of these fundamental skills, were rarely accomplished in order to offer students a content. When applying the Security Rules, these skills have received a substantial share from future teachers. So, teachers must know the specific rules of each activity, warn pupils of the particular dangers, set up safe routines with pupils and use appropriate lesson plans. Teachers must also establish rules and routines and shape pupils' behaviour which enhances both learning and safety (BAALPE 1995).

Certainly, changes in the security context of the EPS had a better design, an appropriate content and help defining teaching skills. As a result a key area of "responsibility" for a PE teacher to be aware of is the legal requirements and obligations that teachers must stick to in maintaining safety and teaching with a high standard. This security context is achieved through appropriate planning for each child in their P E lessons, including assessing and adhering to the safety rules and practices relevant to the subjects taught. While preparing to teach, the initial role of the teachers should be the consideration of the 'climate' in which they intend to teach PE

(Bailey, 2002). Thus, the above analysis allowed the identification of skills that contributed to an effective consideration of risk in learning or teaching security. Among these skills used in learning situations gymnastics is the choice of learning situations. Hence, according to Cadet (2001), the risk assessment should be made for different teaching scenarios or environments, each highlighting particular hazards; the potentially dangerous things associated with that activity/environment, the risks; and the likelihood of an accident occurring. Researches had shown as well that teachers' personal characteristics and ability to interact with students are indicators of successful teaching (Aicinena, 1991). To improve instruction delivered to students, teachers must have a reflective understanding of the "cadet experience" in the gymnastics course.

In fact, the concept of risk seems to be closely linked to the logic of sports. The effectiveness of the gymnastics course for example partly depends on the development of positive cadet perceptions. Luke and Sinclair (1991) believe that effective curriculum improvements can occur when teachers identify and change those aspects of the curriculum that have resulted in negative perceptions, and build on those aspects that have led to positive perceptions. They often encouraged one another, and the total insulation of the motor task leads to a critical loss at the cultural significance of the content taught. It would in fact be adapted at any time in learning the risk level of the student's skill. It is obvious that the teacher must be considered in the collective organization of learning. The opportunity for each student to choose a certain level of risk seems an interesting way. Furthermore, future teachers used preventive skills that led to the development and management of "passive" safety devices. Moreover, the acquisition of a motor skill in a risky context seems to require a particular didactic treatment. It would not eliminate any objective danger, but it would consider the risk as a variable which could be dealt with as a controlled escalation and through

which it is possible to develop the students' skills and specific knowledge. Indeed, Physical Education, in general, and gymnastics, in particular, may provide a real learning safety, carrying specific skills and methods which are transferable to other sectors' attitudes. It seems quite possible to provide "safety learning" cycles in Physical Education. Such a security cycle must be rooted in a sporting activity with a carrier level (i.e., gymnastics or climbing), through which skills security are associated with knowledge of the discipline (Delignières, 1989; Kambas et al. 2004) needed to conduct any practice.

CONCLUSION

The findings suggested that future physical education teachers caring showed great importance for Equipment's Management, Time Space Management and Space Management. Likewise the taking of responsibility, Intervention /help, and Group management were the most determinant skills used during the future teachers' interventions.

In fact, we deduce that these skills were effective for teaching and were very important skills in making safety in learning gymnastics situations.

In conclusion, we deduce that the educational system in gymnastics is including a system at risk. Effective management depends on the skills of the teacher and his perception of the risk related to the situation. The complexities of this system explain the heterogeneity of practices and standardization requirements which are empirically observed. Teaching gymnastic activities in essence contains an irreducible amount of risk it tries to keep (Goirand, 1998). Conversely, some of the causes of this uncertainty are partly placed under the control of the teacher because they do not depend on chance, but on skills in envisaging risks.

Safe practice in Physical Education should be an integral feature of all aspects and in all phases of education, from the very early years of playgroup and reception to

adulthood and higher education. Teachers and people in positions of responsibility have a duty to care for those who are in their charge to ensure that planning and implementation should include recognition of safety as an important element.

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