111 - INFLUENCE OF THE DIAGNOSTIC ASSESSMENT ON PLANNING DECISIONS IN PHYSICAL EDUCATION

JOSÉ HENRIQUE
Rural Federal University of Rio de Janeiro - Rio de Janeiro - Brazil
CARLOS JANUÁRIO
Faculty of Human Kinetics - Lisbon - Portugal
henrique@ufrrj.br

1. Introduction

The act of planning is part of our daily routine, because the anticipation of situations and the mental elaboration of projects demand search capacity, regularly constituting a procedure used by the human being.

In the planning, the technological and pedagogic perspectives coexist (Zabalza, 1997; Altet, 2000). The first one represents the technical-didactic conception for structuring the knowledge, teaching strategies and control of learning, while the second one represents the formative sense of the action and the integration of the instruction and education (Zabalza, 1997).

In conceptual terms, planning corresponds to the teacher's reflection to systematize the curriculum and the teaching intervention based on the educational objectives, in way to advance a plan of effective action (Ramírez, 2002). There are several ways to represent and to organize these elements, resulting in planning models. The rational-lineal planning model is the most commonly mentioned in the literature and their sequence results of: (a) specification of the learning objectives in operational terms, (b) selection and organization of actions and convenient strategies to reach the proposed objectives, and (c) careful measurement of the pupil's learning with reference to the established objectives (Piéron, 1999; Arends, 1995).

1.1. The psychological perspective on teacher planning

The approach of the teacher's planning as psychological activity is based on the teachers' thought process paradigm (Clark & Peterson, 1986). The research under this paradigm emerged from the principles of the cognitive psychology and it constitutes an alternative form of research, complementing the research focused on teacher's behaviour.

In the teaching-learning process, we believe that the same behaviour can have origin in different intentions (Januário, 1992). This alerts us for the importance of considering teacher's thought as a way to understand teaching behaviour. Thus, this paradigm emerged from the conception that teacher behaviour is influenced substantially by their thoughts. Therefore, many investigators seek to clear the processes of the teacher's thoughts in both processes, planning and during the teaching.

Clark & Peterson (1986) proposed a heuristic model that comprises the teacher's thought and the teacher's behaviour. While the cognition involves the teacher's thoughts and decisions in preactive, interactive and post active phases, in action domain, it comprises teachers and pupil's behaviours, as well as academic accomplishment.

The planning conception as a mental activity of the teacher is defined as: "*a set of basic psychological processes in which a person visualizes the future, inventories means and ends, and constructs a framework to guide his or her future action*." (Clark & Peterson, 1986, p. 260).

The planning is elaborated assuming that the teacher is a mediator between the curriculum and the teaching (Clark & Yinger, 1987). The teacher translates the curriculum and their goals, seeking to adapt them to the reality of the teaching (Januário, 1992). In this way, the planning is an interface between the curriculum and the teaching. Consequently, teacher planning belongs to the both dimensions - curriculum and teaching.

Teacher planning demands decisions about pupils' needs, objectives, contents, methodological options, organization of learning conditions and of pupils' participation, as well as the evaluation of outputs and processes (Altet, 2000). These decisions should be flexible, once the pedagogic interaction is founded on the complexity (or richness) of the relationships in class, impossible of being totally controlled when planning.

1.2. Diagnostic Assessment: input about the pupil's needs

In the didactic manuals the diagnostic assessment appears as an evaluation modality, which the teacher appeals to obtain information about capacities, interests, characteristics and personal experiences brought by the pupils to the classroom. This information optimises teacher planning for the specification of objectives, selection of the content and their didactic progression, as well as in the assessment. Sánchez (1997) affirms that "*una de las principales finalidades de la evaluación consiste en detectar los fallos del alumno* [...] *para, estudiadas sus causas, planear los remedios.*" (p. 30). The studies revised by Clark & Peterson (1986) show that the focus on abilities, needs and pupils' interests, in some cases, precedes the teaching goals specification.

The analysis about planning decisions under the view of the expertise allows gathering a group of knowledge systematically associated to the pedagogic virtuosity and to the effectiveness of the teaching. The teachers gather the knowledge that possess on the pupils' competences and they compare with their teaching intentions seeking to certify that the pupils will be able to understand and to practice the content (Januário, 1996; Manross & Templeton, 1997). In the study accomplished by Schempp, Manross & Tan (1998), when the teachers represented the teaching in their expertise area, they anticipated the learning problems that the pupils could face, as well as they idealized alternative strategies. When experienced teachers plan teaching strategies, they frequently base on the pupils' individual characteristics and the essential and facilitative ways for the achievement.

In the inventory of planning decisions accomplished by Housner & Griffey (1985), experienced teachers demonstrated concern with pupils' personal characteristics during the design of the teaching. The largest number of references about procedures with the purpose of subsidizing the pupils with important information about the contents, made clear the concern with pupils' needs, as well as the permanent compromising with their academic progress.

These evidences lead to believe that experienced teachers demonstrate more concern in adapting the tasks to the pupils' needs, denoting compromise with the facilitation of the pupils' learning.

2. Objectives

The purpose of the study is to analyze the profile of 'more' and 'less' effective PE teachers' planning associated to the quality of their diagnostic assessment. Thus, this study intends:

- To categorize the statements related to the diagnostic assessment expressed by 'more' and 'less' effective PE teachers during the planning of a unit of teaching;

- To compare 'more' and 'less' effective PE teachers about the quality of the preactive thoughts related to the diagnostic assessment, considering: (a) the frequency of diagnoses; (b) the amount of assessment categories; (c) the proportion of diagnoses for category; and (d) the influence of the diagnostic assessment on planning decisions.

3. Method

The study is characterized as descriptive and it was developed under a quali-quantitative perspective. In the qualitative focus we make use of semi-structured interviews and content analysis. The quantitative focus allowed to count the units of meaning (thoughts) related with diagnostic assessment and to express them through absolute and relative frequency, ratio, average and standard deviation.

3.1. Sample

From an initial sample of 15 teachers of public schools of Rio de Janeiro, we selected 10 PE teachers characterized as 'more' (n=5) and 'less' (n=5) effective. Teacher effectiveness was measured in terms of gains in pupil learning on the high jump skill, in 6th to 8th grade classes.

3.2. Data collection procedure

The preactive thoughts about diagnostic assessment were collected through semi-structured retrospective interview, accomplished after the planning of the unit of teaching. The transcribed interviews were analysed through content analysis. The categories were identified through constant comparison (permanent comparison) (Glaser & Strauss, 1967, in Bogdan & Biklen, 2003; Huber, 1997). We identified the thoughts associated with the diagnostic assessment that influenced planning decisions, and we calculate the indicator of influence on the diagnostic assessment (decisions assumed in function of (regarding) the diagnosed factor).

3.3. Data Analysis

The quality of the diagnostic assessment was characterized by (a) the frequency of assessment categories, and (b) the absolute and relative frequency of statements uttered by the 'more' and 'less' effective PE teachers by category. The degree of influence of the diagnostic assessment (*ID*) on planning decisions corresponded to the ratio between the amount of diagnostic assessment that influenced planning decisions (*DI*) and the amount of diagnostic assessment (*TD*) enunciated by the 'more' and 'less' effective PE teachers (*ID=DI/TD*).

4. Results

4.1. Diagnostic assessment categories

The content analysis and constant comparison allowed identifying six categories comprising a group of elements that potentially influence the planning decisions:

a) *Psychomotor characteristics*. References about pupils' psychomotor conditions, referring the requirements for the learning and description of the pupils' real conditions in psychomotor domain;

b) *Morphologic-functional characteristics*. References about biotype and phase of the pupils' development;

c) *Psychological-affective characteristics*. References related with the pupils' attitude toward the atmosphere of the class, subjects, and conditions of participation in task;

d) *Conduct-discipline characteristics*. References related with the conduct and pupils' discipline;

e) *Social-cultural characteristics*. References associated with the pupils' social, economical and cultural status and their life conditions.

f) *Characteristics of the educational atmosphere*, conditions and materials for classes. This category was considered because it appeared frequently associated to teachers' evaluations. This category aggregated references to the conditions of the gym, available material for the classes and educational atmosphere of the school.

4.2. Descriptive indicators of diagnostic assessment quality

Other quantitative indicators constituted parameters of quality of the educational diagnosis: (a) number of categories and (b) absolute and relative frequency of thought' units (Table 1).

Table 1. Indicators of diagnostic assessment quality (*DA*)7,1 7,17

	Teachers - Group of effectiveness			
	Less		More	
Indicators	M	SD	M	SD
DA - absolute frequency	12,6	3,20	12,8	4,32
DA - total of categories	4,6	0,89	4,6	1,14
DA - relative frequency psychomotor (%)	12,4	8,18	23,5	13,89
DA - relative frequency morphologic-functional (%)	12,2	8,87	7,1	7,17
DA - relative frequency psychological-affective (%)	32,6	7,26	27,8	6,50
DA - relative frequency conduct/discipline (%)	27,5	10,15	26,2	10,78
DA - relative frequency social-cultural (%)	4,0	8,94	2,5	3,48
DA - relative frequency environment, conditions/materials (%)	11,3	8,00	12,9	17,31
indicative factor of diagnosis' influence	0,18	0,07	0,33	0,03

The two groups of teachers don't differ significantly about the frequency of statements and about the amount of categories of diagnostic assessment.

In both groups of effectiveness, the largest percentage of evaluations is focused in the categories 'psychological-affective' and 'conduct/discipline', in which all the teachers made statements; and 'psychomotor', in which nine teachers made statements. The smallest frequency was observed in the 'social-cultural' category, which only three teachers made statements.

The assessment proportion in the 'psychological-affective' and 'conduct/discipline' categories indicates that the teachers of both groups of effectiveness are concerned with the reaction of the pupils to the subject taught (high jump) and with the consequences of the development of a less usual task, considering that the practice of collective sports is more common in PE classes. The most usual causes enunciated by the 'more' and 'less' effective teachers for the evaluations in these categories were (a) the fear due to the need of jumping elevated heights, (b) the attitude toward subject taught and (c) pupils' intimidation due to the threat imposed by the activity. The teachers justified these evaluations alleging that to the pupils' reaction could have consequences on the level of the pupils' participation and, therefore, for class management.

The percentage of evaluations about the pupils' psychomotor competence was dominant among 'more' effective teachers. On the other hand, statements about the biotype and developmental characteristics were predominant among 'less' effective teachers. The 'most' effective teachers frequently referred the pupils' capacities as base for the planning of the teaching and learning. The 'less' effective teachers referred factors like age, and physical, affective and socioeconomic pupil characteristics for, primarily, to justify the expectations related to the simple accomplishment of the activities for the pupils.

The influence of diagnostic assessment on planning decisions differentiated 'more' and 'less' effective teachers in a consistent way. This indicator determined the measure which the diagnostic assessment influenced the decisions of 'more' and 'less' effective teachers' planning. The register of diagnosis influence was accomplished whenever diagnostic assessment conditioned a planning decision. The average reached by the 'most' effective teachers (.33±.03) corresponded approximately to the double of the value verified for the 'less' effective teachers (.18±.07) (Figure 1). This fact shows that the 'most' effective teachers plan based on the information gathered in the diagnostic assessment, suggesting better adaptation of the teaching to the pupils' needs. The 'less' effective teachers use in smaller proportion the information gathered in the diagnostic assessment to base the planning.

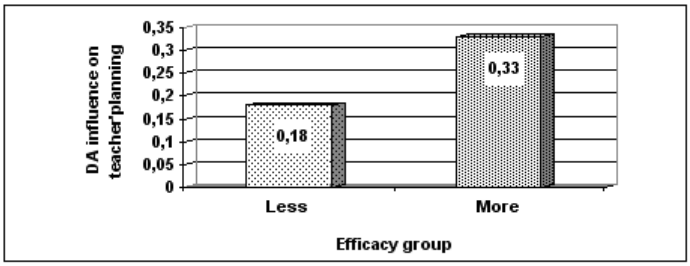

Figure 1. Influence of diagnostic assessment in PE teacher planning

5. Conclusions

A larger magnitude of thoughts was observed in the categories 'psychological-affective' and 'morphologic-functional' diagnosis for 'less' effective teachers and, on the other hand, in the category 'psychomotor' for 'more' effective teachers.

In general, teachers proposed statements in all categories of diagnostic assessment: This confirms that the teacher takes into account numerous factors during the planning, so that the teaching elapses in agreement with expected and allow reaching the established goals (Januário, 1996; Zabalza, 1997; Sánchez, 1997; Ramírez, 2002).

In this research it was observed that the teachers didn't differ significantly with relationship to the categories of the thoughts associated to diagnostic assessment, independently of the group of effectiveness. However, 'most' effective teachers mentioned assessment in psychomotor domain more frequently, maintaining both, the focus in the more specific learning domain and the coherence with the objectives of the teaching unit. Considering that the objectives converged for the learning of the movement, it was expected that an expressive part of the diagnosis was addressed to the psychomotor domain. Sánchez (1997) emphasizes the importance of the psychomotor diagnostic assessment in PE. According to the author this evaluation assumes a generic character, specific or it is destined to identify pupils' critical difficulties. Therefore, the 'most' effective teachers' assessment was more coherent with the objectives for the unit of teaching.

The diagnostic assessment provides teacher with information and it subsidizes the decisional process, allowing anticipating scenery of appropriate teaching to the pupils' needs and guide to reach the proposed goals. Therefore, diagnostic assessment will only have effect when conditioning teachers' decisions and choices, as well as to allow adapting them to the pupils' reality and teaching conditions. In this study, more than 30% of the diagnostic assessment conditioned decisions of the 'most' effective teachers' planning. That is almost twice the statements uttered by the 'less' effective teachers. The most effective teachers were more judicious in the evaluation of the reality because this evaluation influenced teaching planning, requesting forecast of strategies and specific alternatives in way to adapt the teaching to the conditions of environment and of the pupils.

The literature points out the value of diagnostic assessment as a starting point of teaching planning. This helps the process of decision about selection and adaptation of objectives, subjects and teaching strategies (Arends, 1995; Januário, 1996; Ramírez, 2002). In fact, Henrique (2004) verified coherence between the thoughts of planning of a unit of teaching and corresponding categories of the class plans. Januário (1996) analysed the relationship between teacher's planning and the teacher's behaviour, and the results showed positive association between diagnostic assessment and task management.

These results reveal the possibility of the association between the teacher's capacity on accomplishing diagnostic assessment, planning decisions and teaching effectiveness. The capacity to anticipate pupils' needs is related with a teacher's prospective attitude, leading to the planning of activities optimised at the level of the pupil's achievement.

The accomplishment of other studies can confirm this postulate and to reinforce the importance of the information obtained through diagnostic assessment for planning and teaching effectiveness. With this information, the teacher will be able to establish the most appropriate path for attainment of the objectives foreseen in the curriculum and in the institutional pedagogic project. The results can have implications for the professional training of preservice and inservice teachers.

6. References

ALTET, M. **Análise das Práticas dos professores e das situações pedagógicas**. Porto: Porto Editora, 2000. 192 p.

ARENDS, R. I. **Aprender a ensinar**. Lisboa: McGraw-Hill, 1995. 566 p.

BOGDAN, R. C.; BIKLEN, S. K. **Qualitative research for education: an introduction to theory and methods**. (4ª ed.). Boston: Allyn & Bacon, 2003. 336 p.

CLARK, C. M.; PETERSON, P. Teachers' thought processes. In WITTROCK, M. (Ed.), **Handbook of research on teaching**. 3rd ed. New York: Macmillan, 1986. cap. 9, p. 255-296.

CLARK, C. M.; YINGER, R. J. Teacher planning. In BERLINER, D. C.; ROSENSHINE, B. (Eds.), **Talks to Teachers**. New York: Random House. 1987. p. 342-368.

HENRIQUE, J. **Processos mediadores do professor e do aluno***:* uma abordagem quali-quantitativa do pensamento do professor, da interação pedagógica e das percepções pessoais do aluno na disciplina de educação física. 2004. Tese. 628 f. (Doutorado em Ciências da Educação) - Faculdade de Motricidade Humana, Lisboa, 2004.

HOUSNER, L.; GRIFFEY, D. Teacher cognition: Differences in planning and interactive decision making between experienced and inexperienced teachers. **Research Quarterly for Exercise and Sport**, v. 56, p. 45-53, 1985.

HUBER, G. L. **Analysis of qualitative data with AQUAD Five for Windows**. Schwangau: Ingeborg Huber Verlag, 1997.
JANUÁRIO, C. **O pensamento do professor**: Relação entre as decisões pré-interactivas e os comportamentos interactivos de ensino em educação física. 1992. Tese (Doutoramento em Ciências da Educação) - Faculdade de Motricidade Humana, Lisboa, 1992.
JANUÁRIO, C. **Do pensamento do professor à sala de aula**. Coimbra: Almedina, 1996.
MANROSS, D. P.; TEMPLETON, C. Expertise in teaching physical education. **Journal of Physical Education, Recreation and Dance**, v. 68, n.3, p. 29-35, 1997.
PIÉRON, M. **Para una enseñanza eficaz de las actividades físico-deportivas**. Barcelona: INDE, 1999. 314 p.
RAMÍREZ, J. V. **Planificar en Educación Física**. Barcelona: INDE, 2002. 262 p.
SÁNCHEZ, D. B. **Evaluar en Educación Física**. 4. ed. Barcelona: INDE, 1997.
SCHEMPP, P.; MANROSS, D.; TAN, S. Subject expertise and teachers' knowledge. **Journal of Teaching in Physical Education**, v. 17, 1-15, 1998.
ZABALZA, M. A. **Planificação e Desenvolvimento Curricular na Escola**. 3. ed. Rio Tinto: ASA, 1997.

José Henrique dos Santos
Avenida Ministro Fernando Costa, 416
Boa Esperança - Seropédica - RJ - CEP 23890-000
E-mail: henriquejoe@hotmail.com
Tel/Fax: (21) 26822482

INFLUENCE OF THE DIAGNOSTIC ASSESSMENT ON PLANNING DECISIONS IN PHYSICAL EDUCATION

Abstract

The diagnostic evaluation in psychomotor domain is very important in PE settings. Research shows that the focus about student's interests, abilities and needs precede teaching goals specification, and that expert teachers mobilize knowledge on student's competences and compare with their teaching intentions to certify that students will be able to reach the proposed goals. The purpose of this research was to analyze the diagnostic evaluation and its influence on planning decisions of 'more' and 'less' effective PE teachers. The sample was 10 teachers, classified by effectiveness categories. The teachers were interviewed and the identification of diagnostics was accomplished through content analysis. The 'most' effective teachers emphasized evaluation in specific learning domain (psychomotor) and the diagnostic of these teachers influenced in larger degree their planning decisions. The results show that the quality of diagnostic evaluation had strong impact on both planning and teaching effectiveness. Key-words: Teacher planning; Physical Education; Teaching effectiveness.

L'INFLUENCE DE L'EVALUATION DIAGNOSTIQUE DANS LES DECISIONS DE PLANIFICATION EN ÉDUCATION PHYSIQUE

Résumé

La recherche montre que la centration sur les capacités, besoins et intérêts des élèves précèdent la spécification des objectifs de l'enseignement, et que les enseignants experts mobilisent la connaissance sur les compétences des élèves et les comparent avec les intentions de leur enseignement pour la certification que les élèves seront capables d'arriver aux objectifs proposés. Cette recherche analyse la capacité d'évaluation diagnostique des enseignants d'Éducation Physique 'plus' et 'moins' efficaces et son influence sur les décisions de planification. L'échantillon était 10 enseignants, classés par catégories d'efficacité. Les enseignants ont été interviewés et l'identification de diagnostic a été accomplie à travers d'analyse du contenu. Les enseignants 'plus' efficaces ont accentué l'évaluation dans le domaine de l'apprentissage spécifique (psychomoteur) et le diagnostique de ces enseignants influence leurs décisions de planification en un degré plus fort. Les résultats montrent que la qualité de l'évaluation diagnostique avait un fort impact sur la planification et sur l'efficacité de l'enseignement.

Mots-clef: Planification du professeur; Éducation Physique; Efficacité de l'enseignement.

LA INFLUENCIA DE LA EVALUACIÓN DIAGNOSTICA EN LAS DECISIONES DE PLANIFICACIÓN EN LA EDUCACIÓN FÍSICA

Resumen

La evaluación diagnóstica en el dominio psicomotor es muy importante en las clases de educación física. Las investigaciones muestran que el enfoque sobre los intereses, las habilidades y necesidades del alumno precede la definición de las metas de enseñanza. Los profesores expertos movilizan el conocimiento sobre las competencias discente y las comparan con sus intenciones de enseñanza para tener certeza de que los alumnos lograrán los objetivos deseados. El propósito de esta investigación analiza la evaluación diagnóstica así como determina el grado de influencia de la misma en la planificación. Los 10 profesores de educación física de la muestra fueron clasificados en grupos de eficacia. Los profesores fueron entrevistados y el investigador identificó y clasificó la evaluación diagnóstica a través del análisis de contenido. Los profesores 'más' eficaces enfatizaron la evaluación en el dominio psicomotor y esto influenció, en gran medida, sus decisiones en la planificación. Los resultados muestran que la calidad de evaluación diagnóstica tuvo fuerte impacto en la planificación y, como consecuencia de ello, en la eficacia de la enseñanza.

Palabras claves: Planificación; Educación Física; Enseñanza eficaz

A INFLUENCIA DA AVALIAÇÃO DIAGNÓSTICA NAS DECISÕES DE PLANEJAMENTO EM EDUCAÇÃO FÍSICA

Resumo

De acordo com a literatura o foco sobre as habilidades, necessidades e interesses dos alunos antecede a especificação das metas de ensino. Em Educação Física as pesquisas mostram que os professores '*expert*' mobilizam conhecimentos sobre as competências discentes e confrontam-nos com as suas intenções de ensino para se certificarem que os alunos estarão aptos para a realização das metas propostas. O objetivo do estudo foi analisar a natureza da avaliação diagnóstica e sua influência sobre as decisões de planejamento concomitante à eficácia do ensino. A amostra foi constituída por 10 professores, classificados por classes de eficácia. Os professores foram entrevistados e a identificação dos fatores avaliados foi realizada através de análise de conteúdo. A avaliação diagnóstica foi mais específica e influenciou em maior grau o planejamento dos professores 'mais' eficazes. Os resultados mostram que a qualidade da avaliação diagnóstica teve forte impacto sobre o planejamento e sobre a eficácia do ensino.

Palavras-chave: Planejamento do professor; Educação Física; Eficácia do ensino.