OBSERVING STUDY REGARDING THE INTERDISCIPLINARY CONNEXIONS IN BASKETBALL FOR TEACHING THE GAME TO STUDENTS IN THE BASIC COURSE

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Abstract
Making the technical elements and procedures in the basketball game content's requires the participation of alternate or simultaneous, symmetrical or asymmetrical all body segments. Thus a rational, economic and efficient execution in the bilateral success of the game is based on the interaction of a number of disciplines. The paper is based on an observing study that sought to identify connections of basketball with other disciplines which are necessary steps in technique training game for teaching it to students in the basic course.
Key words*: basketball, interdisciplinary, students, basic course*

INTRODUCTION

To assimilate the technical content of the basketball game, it is necessary during the years of study, students getting used to transfer and use the situation of training, the theoretical and methodological knowledge obtained in other disciplines.

According to DEX online interdisciplinary is a "transfer of concepts and methodology from a discipline to another ...". Thus, the interdisciplinary approach covers disciplines that collaborate in order to explain, solve, and demonstrate certain facts, processes, etc. that manage to clarify certain issues. We believe that interdisciplinary is the interaction between two minimal disciplines aiming to find new solutions to the implementation of technical elements and processes rationally, economically and technically efficient. A number of specialists present the importance of interdisciplinary and its necessity in the basketball game. (T. Predescu, A.D.Moanţă, 2001; Fleancu J.L, Ciorbă, C., 2004; A.D Moanţă, D.A 2005; Tarabas, L. C. 2011; Sandeep Kr., Barkha Bhardwaj, 2011; P.S. Haba, 2011, A.M Covaci, 2013, E. Budescu, R.M. Iacob, E. Merticaru, 2013,C. Cociorba, 2014, etc).

HYPOTHESIS

Assuming that the promoting of interdisciplinary is an element of progress and knowledge, identifying and synthesizing information from related disciplines, contribute to the quality of teaching, allowing students in the basic course to acquire specific technical processes efficiently.

The purpose of the paper is represented by the identification of interdisciplinary connections of basketball in order to teach the techniques of the game to students in the basic course.

Tasks and steps of research correspond to the following stages:

Stage I:

- specialized study and exploitation of documents and methodical-practical experience of specialists;
- interviewing specialists and students for the research theme proposed.

Stage II:

- processing and development of data;
- summarizing the information and identifying connexions of basketball with other disciplines.

Stage III:

- highlighting conclusions and practical-methodical recommendations.

METHOD OF RESEARCH

The methods used during this study were: bibliography study method, teaching observation method, questionnaire survey method, statistical and mathematics method, graphical and tabular method.

RESEARCH STRUCTURE AND ORGANISATION

Present study took place between 14.10.2013 – 30.05.2014 at the Physical Education and Sport Faculty, Galati, Romania and USEFS, Chisinau, Republica Moldova.

Research subjects were 38 teachers (22 Romania, 16 Republica Moldova) and 133 students (103 Romanian students, 30 of Republica Moldova).

To complement the theoretical - methodical content of study there were completed a number of 171 questionnaires (38 teachers, 133 students). The questionnaires focused on both teachers and students. For knowledge-based opinion survey questionnaire was divided into six items in the form of questions. The type of

questions used is the closed ones and partially opened, for those there is the possibility to choose an answer. The content of questions was identically for both investigated categories. To be noted that the survey questionnaire aimed to complement the study.
Following the opinions were valued and processed, aiming to check the working hypothesis.

DATA PROCESSING AND INTERPRETATION

The percentage values and the answers frequency obtained by the teachers after processing the survey questionnaire are summarized in tables 1-2.

Table 1. Summarization of teachers' advice regarding the interdisciplinary of basketball game (questions 1-5)

Question	Teachers option					
	Yes		No		Partially	
	Option	%	Option	%	Option	%
Question no. 1	38	100	0	0	0	0
Question no. 2	35	92,10	0	0	3	7,89
Question no. 3	11	28,94	22	57,89	5	13,15
Question no. 4	17	44,73	9	23,68	12	31,52
Question no. 5	11	28,98	0	0	27	71,05

Question no.1: *In your opinion is interdisciplinary important within a subject?* Yes/ No/ Partially
Specialists think interdisciplinary has an important role within a subject; the percentage is 100% for "yes". Teachers agree with integration of knowledge specific to other subjects in the teaching-learning process (Figure1).

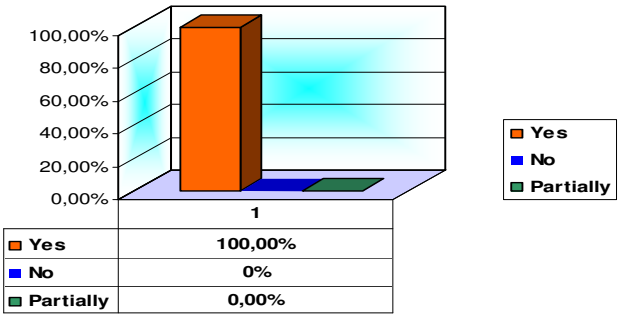

Figure 1 – Teachers' opinion regarding the importance of interdisciplinary within a discipline

Question no.2: *Do you agree with interdisciplinary teaching of basketball game within practical lessons?* Yes/ No/ Partially

Teachers think it is important the interdisciplinary teaching of basketball game in proportion of 92,10%, and a small percentage of 7,89% partially. They also highlight the fact that a single approach in one area of the game of basketball is impossible (No-0%).- Figure2.

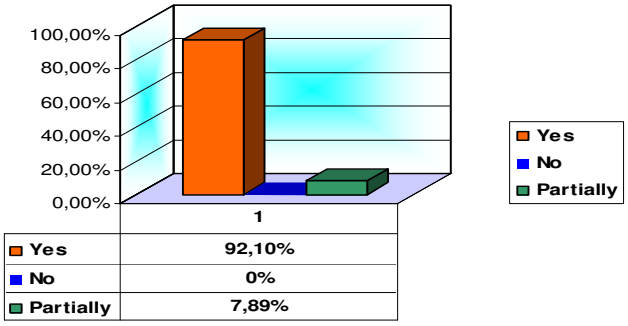

Figure 2 – Teachers' opinion regarding the interdisciplinary importance in the game of basketball

Question no.3: *Within hours of physical education and sport as a student/pupil have your teachers made interdisciplinary connections in teaching a technique procedure for playing sports in middle school, high school, college?* Yes/ No/ Partially

Data processing for this question, points out that there are limitations and difficulties in the transfer of concepts and methodology of one subject to another. Thus, teachers have received interdisciplinary connections in teaching a specific technique of a sports game only at a rate of 28.94%. Thus 57.89% reported lack of correlations with other subjects in the training process and partly only 13, 15% (Figure3).

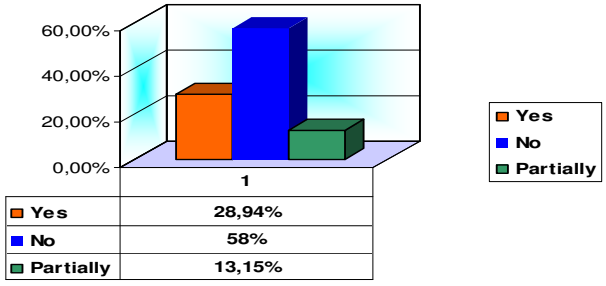

Figure 3- Teachers view regarding interdisciplinary connections for teaching technical procedures in middle school, high school, college

Question no.4: *Within theoretic - methodical lessons do you talk to your students about/teachers about interdisciplinary of the game?* Yes/No/ Partially

To this question there are close results (the percentage difference of 13,21%) between yes – 44,73% and partially – 31,52%. These values highlight the interest that teachers have for regrouping the subjects in the instruction process of basketball game. A percentage of 23,68% considers that because of small hours assigned to this subject, didn't approach this interdisciplinary from a theoretical- methodic point of view (Figure 4).

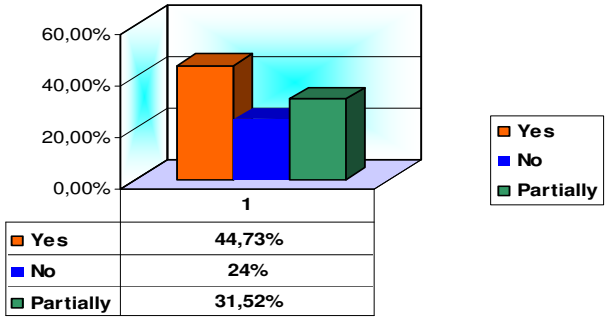

Figure 4 – Teachers' opinion regarding the approach of interdisciplinary in practical-methodical lessons

Question no.5: *Do you think that other subjects covered in previous years by students, contribute to the acquisition of technical-tactic content of their basketball game?* Yes/ No/ Partially

A percentage of 71,05% of teachers think that specific information content of other subjects, partially leads to learn the game, 28,98% totally appreciate (Figure 5).

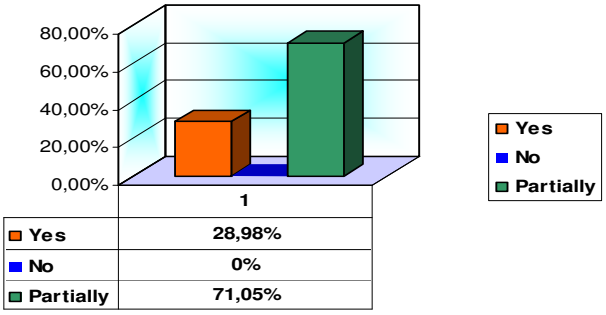

Figure 5- Teachers' opinion on the influence of subjects previously learned in order to teach the basketball game

Question no.6: *Which one of next subjects learnt by students do you consider to be related and to contribute at learning the game?* Anatomy and biomechanics/ Biochemistry/ Physiology/ Informatics/ Sociology/ Management/ Marketing/ Statistics – mathematics/ Pedagogy/ Psychology/ other subjects.

The percentage for each subject was assigned like this: Anatomy and biomechanics (100%), Biochemistry (65,78%), Physiology (84,21%), Informatics (36,84%), Sociology (21,05%), Management (76,31%), Marketing (28,94%), Pedagogy (100%), Psychology (89,47%), Statistics – mathematics (50%), other subjects (14,61%)- Figure 6.

Advice from teachers, regarding the subjects whose content interact with basketball game, is presented in table no.2.

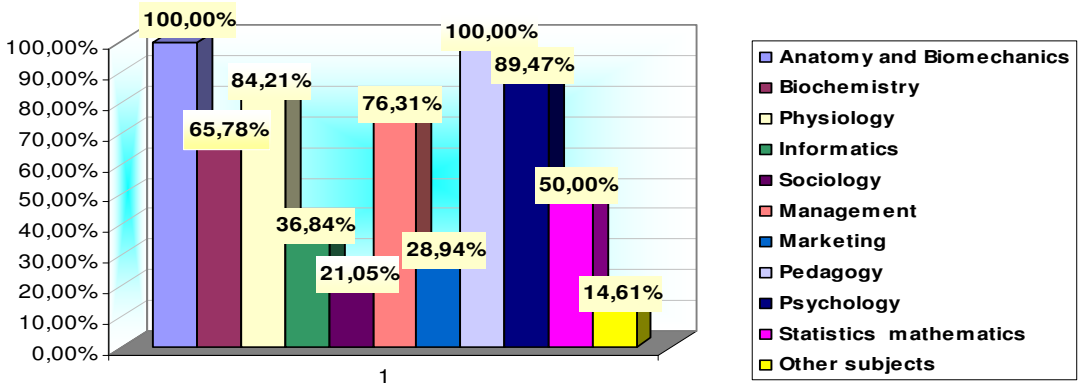

Figure 6- Students opinion regarding the subjects that interact with the basketball game

Table 2. Advice from teachers regarding the subjects related to basketball game (question 6)

Response variants	Teachers option	
	Option	%
Anatomy and Biomechanics	38	100
Biochemistry	25	65,78
Physiology	32	84,21
Informatics	14	36,84
Sociology	8	21,05
Management	29	76,31
Marketing	11	28,94
Pedagogy	38	100
Psychology	34	89,47
Statistics mathematics	19	50
Other subjects	9	14,61

The percentage and frequency of answers obtained from students after the survey questionnaire are summarized in tables 3-4.

Table 3. Advice from students regarding interdisciplinary of basketball game (questions 1-5)

Question	Students option					
	Yes		No		Partially	
	Option	%	Option	%	Option	%
Question no. 1	81	60,90	0	0	52	39,09
Question no. 2	78	58,64	0	0	55	41,35
Question no. 3	32	24,06	67	50,37	34	25,56
Question no. 4	9	6,76	94	70,67	30	22,55
Question no. 5	112	84,21	2	1,50	19	14,28

Question no.1: *Do you think interdisciplinary is important within a subject?* Yes/ No/ Partially
Centralizing data after questioning the students highlights that 60,90% answered "yes" and 30,09% "partially". The 0% value for "no" shows that students realize the benefits of interdisciplinary teaching (Figure7).

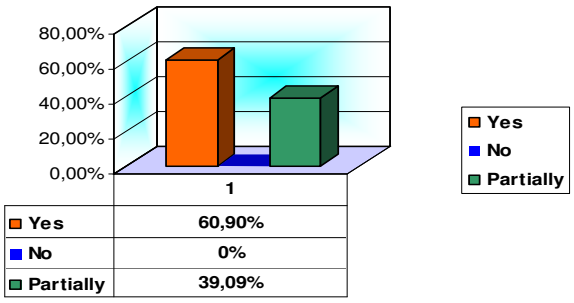

Figure 7 – Students opinion regarding the importance of interdisciplinary within a discipline

Question no.2: *Do you agree with interdisciplinary teaching of basketball game within practical lessons?* Yes/ No/ Partially
To this question 58,64% prefer during the training process of basketball game, permanent interactions with other related subjects, as it clarifies and facilitates the understanding of technical components structure, 41,35% only partially. There weren't opinions for "no"(0%)- Figure8
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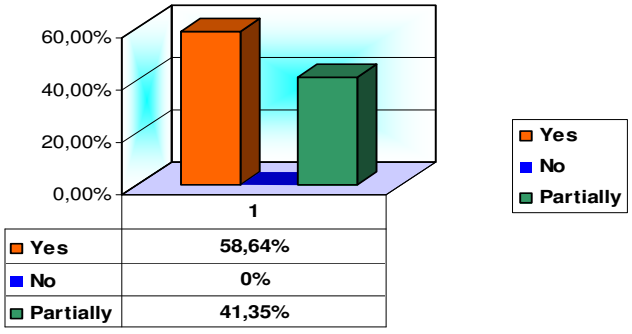


Figure 8 – Students opinion regarding the interdisciplinary importance in the game of basketball

Question no.3: *Within the education and physical lessons as a student, did your teachers make any interdisciplinary connexions in teaching a technical procedure for the game practiced in secondary,, high school?* Yes /No/ Partially

Lack of correlation between playing sports practiced in secondary, high school and the content of connected subjects is confirmed by percentage (50,37%) for "no". closed values are registered for "yes"- 24,06%, and "partially" – 25,56% (Figure 9).

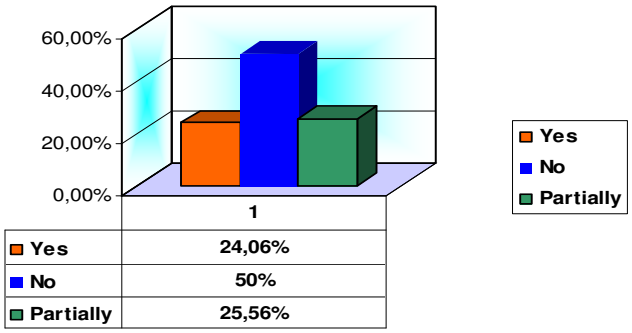


Figure 9- Students view regarding interdisciplinary connections for teaching technical procedures in middle school, high school, college

Question no.4: *Within theoretic - methodical lessons do you talk to your students about/teachers about interdisciplinary of the game?* Yes/No/ Partially

The obtained values indicate that a proportion of 6,76% received notions of interdisciplinary game. A percentage of 70,67% consider that there were no concerns about the connections with other subjects and 22,55% only partially (Figure10).

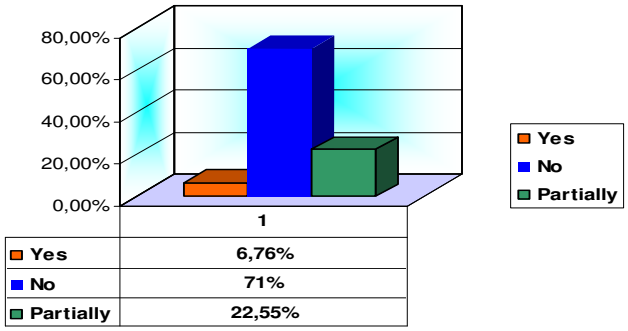


Figure 10 – Students opinion regarding the approach of interdisciplinary in practical-methodical lessons

Question no.5: *Do you think that the other subjects covered in previous years contribute to acquiring a technical-tactic content of basketball game?* Yes/No/ Partially

A percentage of 82,21% say that the subjects taken in previous years by information gathered helps to improve the game of basketball practice, 1,50% did not consider it and 14,28% partially (Figure11).

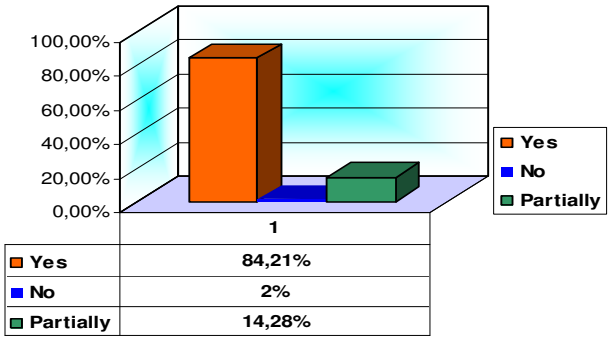


Figure 11- Students opinion on the influence of subjects previously learned in order to teach the basketball game

Question no.6: *Which of the following subjects covered by students, do you consider it connects and contributes at learning the basketball game?* Anatomy and biomechanics/ Biochemistry/ Physiology/ Informatics/ Sociology/ Management/ Marketing/ Statistics – mathematics/ Pedagogy/ Psychology/ other subjects.

The percentage for each subject was assigned like this: Anatomy and biomechanics (96,90%), Biochemistry (34,58%), Physiology (69,92%),

Informatics (17,29%), Sociology (8,27%), Management (21,05%), Marketing (6,01%), Pedagogy (86,46%), Psychology (61,65%), Statistics mathematics (33,8%), other subjects (2,25%)-Figure 12.

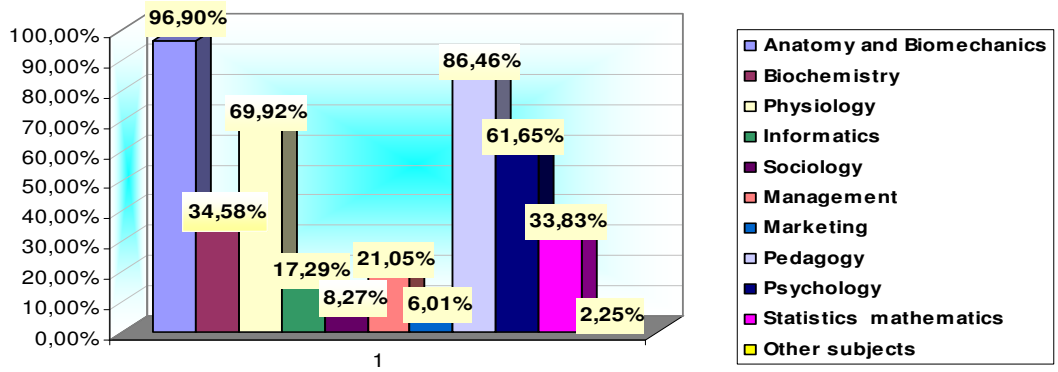


Figure 12- Students opinion regarding the subjects that interact with the basketball game

Advice from students on subjects whose content interact with basketball game, is presented in table no.4.

Table 4. Advice from students regarding the subjects related to basketball game (question 6)

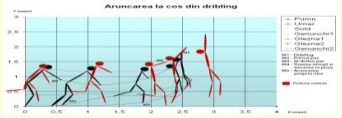
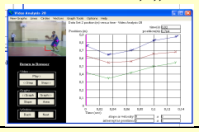
Response variants	Students option	
	Option	%
Anatomy and Biomechanics	129	96,90
Biochemistry	46	34,58
Physiology	93	69,92
Informatics	23	17,29
Sociology	11	8,27
Management	28	21,05
Marketing	8	6,01
Pedagogy	115	86,46
Psychology	82	61,65
Statistics mathematics	45	33,83
Other subjects	3	2,25

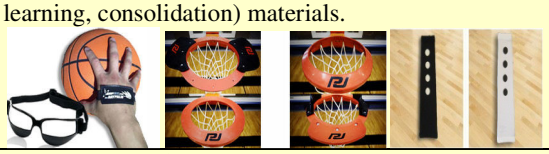
Synthesizing data from the literature on interdisciplinary nature of the basketball game helped to verify the working hypothesis.

Table 5 presents general information about subjects whose content can be transferred and adapted to the teaching-learning process for the basketball game technique.

Table 5

Synthesizing data on subjects for teaching technique on basketball game

No.	Name of the subject	Interdisciplinary arguments for teaching technique on basketball game
1.	**Anatomy**	- Muscles, bones, joints, etc.
2.	**Biomechanics**	- Laws of movement, levers, body posture, of its segments etc. 
3.	**Biochemistry**	- Internal processes during effort.
4.	**Physics**	- Trajectories, angles, distances, gravity.
5.	**Physiology**	- Functional ability of human body. - Adaptability of human body to effort (execution of different technical procedures).
6.	**Informatics**	- Software programmes: *Physics ToolKit- version 6.0" anterior „World - in - motion", „Match Vision Compact", „STEVA Basketball"– etc.* 
7.	**Management**	- Methods of management - Steps to organize a competition: preparing the championship, deployment of championship, completion, end of the championship.

		- Game regulation and necessary demands to organize a competition, a throwing contest, etc.
8	**Marketing**	- Rising the show value: throwing to basket from dribbling, freestyle, street dance, slam-dunk competitions. - Sponsoring basketball projects. - Subject promoting (poster) through competitions or students who play the game in private clubs, promotion sites, mass-media articles, etc.
9.	**Mathematics (algebra, geometry)**	- Mathematical models (probability calculation to perform successful throws to basket), movement equations, etc. - Geometric representations to catch, throw the ball; angles, measurements, distances, etc.
10.	**Mechanics**	- Mechanical models are used that allow the description field goal taking into account the effects that occur during throwing and the clashes that occur between the ball and the panel and between the ball and the ring.
11.	**Pedagogy**	- Methods (explanation, demonstration, exercise, etc.) means (initiation, learning, consolidation) materials. 
12.	**Psycology**	- Psycho-behaviour processes (moods, processes, mental functions), personality (physical education lesson, championship, stress, other situation).
13.	**Sociology**	- Social actions (physical education lesson, academic competitions, contests, etc.). - Social groups (teams, supporters). - Collective nature of the game that develops new strategies for networking and communication (group, team).
14.	**Statistics mathematics**	- Arbitration sheets, programmes.
15.	**Other related subjects: athletics, gymnastics, etc.**	- Athletics: jumped up, run up, running. - Gymnastics: movement terminology.

CONCLUSIONS

- Data provided by processing and interpretation of the survey questionnaire complete the theoretical and methodological content of the proposed paper and contributes to verify the working hypothesis.
- Basketball connections with other subjects in the conducted study are: anatomy, biomechanics, biochemistry, physics, computer science, pedagogy, psychology, management, marketing, sociology, statistics - mathematics and other subjects specific to our field (athletics, gymnastics), etc. They can streamline teaching, learning the game by students and ensures integration of knowledge acquired in other subjects during the study years.
- We recommend that technical training activities for the basketball game to be achieved interdisciplinary, as it provides efficiency and minimizes installation of execution errors.

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