UDC 378.14

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THE KNOWLEDGE TRIANGLE AS A MAIN EDUCATIONAL ASPECT FOR LEARNING OUTCOME

Анотація
У статті описується розвиток основних аспектів трикутника знань (навчально-методичних досліджень) і підхід категорії для вивчення результатів у вищих навчальних закладах. Розглядаються теоретичні та практичні ініціативи, прагнення привернути увагу до студента як споживача в моделі вищої освіти.
Ключові слова: навчання, дослідження, результати навчання, прийняття рішень.

Summary
The paper describes development the main aspects of knowledge triangle (Teaching-Learning-Research) and approach categories to learning outcome at the higher education institutions and follows student's engagement for learning outcome, explores theoretical and practical initiatives, seeks to draw attention to the student as a consumer in the model of higher education, develops understanding of statement of the learning outcomes on the experimental basis at Gori State Teaching University.
Key words: teaching, learning, research, learning outcome, decision making

Introduction. The meaning of teaching and learning in education is changing continuously in line with changes in society. Higher Educational Institutions (HEIs) have to teach their students and teach them to assess what knowledge that will be needed to learn according to development in society. This is probably critical aspect for the development of teaching and learning outcome. It must extend the professional skills of students' and prepare them for the labor market as the fundamentally political and economic force of globalisation that impacts on higher education from point of view of market competition [4]. Therefore, some important elements from the university teaching and learning and research and practice, in addition, are now in a new form. It means, that the integrated educational program with the principles, practices, research and teaching assumes for sustainability at the local, regional, national and international level will be established and strengthened. Today, at the same time, according to the Bologna Process the orientation of studies in Europe tends to reach substantial improvement of a new generation learners and offers opportunities for idea development including research and the HEIs need to stay competitive and transform students' abilities, skills, experience into knowledge. The educational components can be combined with other modules to create sustainable learning environment, which help to make teaching and learning more efficient and effective for decision making what we have to teach and how we have to teach [2]. By Cristencen is suggested startegies four concepts for using in class [1] :

1. Professor-student psrtnership in which both share are the responsibility of the learning process;

2. Learning community where group of discussion have to become a „learning community" which shared values and common goals;

3. Professor-student alliance when peofessor–student relationship must be transformed in order to give the students the opportunity to take control on material;

4. The professor must develop a „dual ability" for managing the debate process.

The analysis of important statistical data according to the real situation by students'vision is interesting, also [11]:

1. Purposes of higher education by student's vision: 97% of students believed it was important to provide students with the knowledge and skills they needed to be employable, 91% agreed that the enhancement of personal development was (very or rather) important and 87% of respondents considered that the education of people to play an active role in society was an important aim of higher education;

2. Post-graduation plans by student's vision: Three-quarters of students working towards a first cycle (Bachelor) degree said they wanted to continue their studies -either to a second cycle (Masters programme) or to find work and resume their studies later on a part-time basis (75%).

Literature review shows a direct causal relationship between high performance teaching and student achievement. This approach examines the integration teaching and learning components and determining how they best work together to learning outcome. Into this direction, research methods have four major using: describing social reality; testing hypotheses about theory; forecasting of future activity and decision making. These factors stimulate an interest in a scientific approach to decision making. Educational system have to be responsible to learning outcome to meet growing demand for higher skills levels that focuses on educational reforms. In fact, it means more strong and stable partnership of teaching-learning processes with the new approaches and methodologies [12].

Current thinking about student's learning outcome of the 21st century is based on involving of the research elements more intensively and to integrate them in the educational process. The academics' must begin to study collaboration in strong settings because student has to master both basic and applied skills and focus them to problem solving and decision making. The thinking includes [8,10]:

a/ consideration and provision an analysis of the current teaching-learning-research (T-L-R) conditions at HE universities;

b/ suggestion a strategy and implementation main principals of learning outcome through integration teaching and learning, information technologies and research design;

c/ Necessity to implement them in HE universities.

Today, we are far from the idea that we can create a real learning environment in HE schools as this is the problem with the number 1, but we can change some of characteristics in to the positive direction inside it for improving student's learning outcome, by achieving to increase the main characteristics of knowledge based society on the basis of T-L-R [5,6,10]:

● Student's motivation in education;

● Student's competitiveness;

● Effectiveness of the global universities, open universities and distance education networks for transformation of education for providing new reforms.

The 21st century demands and seeks a new environment of HE activities through new educational reforms. Research led teaching and learning to initiatives to bring the T-L functions by disciplinary based research, as research is the issue facing professionals today and no doubt, that understanding of the research process integrated with T-L is essential characteristics of HE. It can be expressed as [3,7]:

● Benefits of students and staff;

● Knowledge development;

● Activities for sustainaibility Higher Education Environment (HEE).

In result, by the modern point of view, a creation of the HEE may be considered as a

new teaching methodology and the T-L-R triangle will be as a research-based form of this methodology. This form involves students learn the research process, teaching process of learning outcome and knowledge construction in the subject by which knowledge would be achieved. As a triangle T-L-R creates a new studying environment and ocupies between theory and HEE issues, it has to answer on the questions that are connected with new HE activities design and constructions [12]. This approach sets the new role of the HE and it becomes a new key player between teacher and student and this partnership generates an innovation approach which is suited to the needs of knowledge society and knowledge based economy.

1.1 Student's Role in the Production of Learning Outcome. Higher education reform is a fact of life. Global economic restructuring and fast Information and Communication Technology (ICT) development are reforming all of HEIs. In this situation, sustainability HEE is a social reform movement that is seeking to change the way we learn and conduct our professional and civic lives. Therefore, it could and should be a driving force within higher education reform, but in order to establish such a role, it must extend the students' professional skills and prepare them for labor market as well as our teachers, also. For promoting student achievement, supporting and building a solid organizational structure at Universities have to solve the main tasks according to keep principles for creation educational frameworks, materials, processes and learning environments that enable effective learning experiences for responsible competitive labor market [9]. Accordingly with this issue, student's engagement has enjoyed considerable attention in the literature since the mid of 1990s. Following on, from 'the student experience' and 'teaching' before it, 'student engagement' has become the latest focus of attention among those aiming to enhance learning and teaching in higher education. It is not difficult to understand why: by the literature has established correlations between student involvement in a subset of 'educationally purposive activities', and positive outcomes of student success and development, including academic achievement and social engagement [1,4].

Problem statement. Within these above context we need to evaluate the scheme of the concept of teaching and learning for learning outcome by the main indicators for students competences formation in the university according to the competitive market requirements:

● To seek for opportunities to engage students as possible in dialogue to reinforce their connectedness and intention about the purpose and meaning of their activities for learning outcome through teaching and research;

● To encourage students to coordinate their actions with the academics;

● To attempt to research the better understanding of the relationship and communication between teachers and students.

Research methodology. We determine collaborative approaches for the shaping of learning outcomes through teaching, learning and research. The research was provided in Gori State Teaching University and tested in the Vilnius Gediminas Technical University. In the framework of research was included:

• Preparing two questionnaires for teachers and for students separately with varius number of questions for students for teachers, separately. Score for each question =10 Among them are the questions on:

a/ Motivation of the teachers to be as a producer of the student's learning outcome;

b/The reasons why students can interested to participate in the study programme and want to create his/her learning outcome;

• Calculating the sample size needed to estimate the indicators of the process;

• Collecting data by questionnaires according to the sample size;

• Data processing;

- Findings, analysis and Discussion;
- New design approaches.

Methodological Approach:

1. Study curricula and technical aspects of design with requirements for learning for new learning environment;

2. Research building issues;

3. Students' involvement in assessment.

Research framework. Based on the theories reviewed from the literature and modified to suit the study for the university level, the research framework designed for the triangle (T-L-R) for creation learning outcome are presented by the table1 below.

Table1. Consideration of the concepts for formation of learning outcome by the main indicators according to the competitive market requirements
Learning interact with teaching
Student-focused teaching as the most effective for student's learning process
Research into teaching as an effective strategy and way of benefit of student learning for learning outcome
Student's learning outcome as a result through teaching, transfer process and research
Research into teaching as a transfer process for learning outcome
Learning outcome through teaching, seminars, workshops, conferences and project-based work
Learning outcome should flow from teaching to research
Critical thinking on teaching reform through research as stimulator students' to provide them for learning and learning outcome

Sample size was calculated by using the Taro Yamane formula (A case of finite population): $n = N/[1+N(e)*2]$

Where: n – sample size; N – population size; e – the acceptable sampling error.

The response options into second stage are: Strongly agree (SA), Agree (A), Neutral (N), Disagree (DA), Strongly Disagree (SD). The tests were carried out at the 0.05 level of significance. The reliability of items in second section of the questionnaire was measured by Cronbach's alpha. The results are given in the table2 below.

Table2. Reliability analysis of the variables

#	Variables	Number of Items	Alpha
1	Teaching	6	0.85
2	Learning	7	0.84
3	Research	9	0.70

Findings. Demographic information of respondents is given in the table 3.

Table 3. Demographic information

	Classification	Number	%
Gender	F	101	54.01
	M	86	45.99
		187	100
HE qualification	BA (3rd and 4th year)	65	34.75
	MA	35	18.72
	PhD	6	3.21
Status	Teacher	27	14.44
	Ass. Professor	34	18.18
	Professor	20	10.70
Institution type	Public	187	100

Teaching experience	Above 20 years	12	14.81
	15-20 years	18	22.22
	11-15 years	19	23.46
	5-10 years	15	18.52
	Under 5 years	17	20.99

An independent sample t-test was carried out on the data. The mean values of learning outcome behavior of academics and students are closely related. The results are given in the tables 4.

Table 4. Group statistics

	Type	N	Mean	Std. Deviation	Std. Error mean
Learning outcome	Academics	81	4.94	0.8119	0.0591
	Students	106	4.91	0.8367	0.0683

Analysis of research results. Analysis of indicators of learning outcome was used to explore the degree of consensus on the indicators of each variable (teaching, learning, research). Review of the statements of indicators related to the teaching of academics and students shows that in general most academics and students have a positive **Learning Outcome** and more:

● Teaching interact with research – 65.64%

● Student-focused teaching as the most effective for students'learning process – 69,25%

● Research into teaching as an effective strategy and an effective way for Learning outcome -73.54%

● Research into teaching as a transfer process for learning outcome – 68.78%

● Learning outcome may be provided through teaching, seminars, workshops, conferences and project-based work – 80.15%

● Learning outcome with respect to teaching- research –learning link – 69.11%

● Learning outcome is formed from teaching to research – 66.07%

● Student's learning outcome as a result through teaching, transfer process and research – 75.05%

● Critical thinking on teaching is formed through research as student's stimulator to provide them for learning and learning outcome -72,21%

According to the indicators and the questions by questionnaires to teachers and students we have the results in the tables 5,6,7:

Table 5. Academics and students according to learning outcome through teaching analysis by the teaching indicators (N=187)

Variable	Indicators	Frequency,%				
		SA	A	N	DA	SD
TEACHING Towards Learning outcome	Effective strategy for learning outcome: research into teaching	70	55	44	12	6
	Research into teaching as a learning outcome process	71	68	46	2	0
	Teaching through seminars, workshops, conferences and project-based work is a basis of learning outcome	63	75	49	0	0
	Learning outcome is a link of research and teaching	59	78	45	4	1
	Teaching interact with learning and research	79	72	35	1	0
	Learning outcome should flow from teaching to research	64	78	44	1	0

Table 6. Academics and students according to learning outcome through learnind process analysis by learning indicators (N=187)

Variable	Indicators	Frequency,%				
		SA	A	N	DA	SD
LEARNING Towards Learning outcome	Critical thinking stimulate students' to provide them for learning and learning outcome	70	83	28	4	3
	Student-focused teaching is suggested by many pedagogical researchers as the most effective for student's learning process	78	67	37	5	0
	Learning outcome for learners may be provided through teaching, seminars, workshops, conferences and project-based work	81	78	26	2	
	The learning outcome is a link with respect to research- teaching – learning	69	68	46	2	
	learning interact with teaching and research	77	65	45	0	
	Research improve quality of university teaching and learning	57	81	46	2	

Table 7. Academics and students according to learning outcome through learning process analysis by learning indicators (N=187)

Variable	Indicators	Frequency,%				
		SA	A	N	DA	SD
RESEARCH Towards Learning outcome	Research into teaching is an effective strategy for learning outcome	67	3	39	11	7
	Research into teaching as a learning outcome transfer process	85	0	39	7	0
	A movement of learning outcome may be provided through teaching, seminars, workshops, conferences and project-based work	79	6	25	4	3
	learning outcome views with respect to research and teaching link	61	8	45	3	0
	Research interact with teaching	68	1	39	8	1
	All academics have to be good researchers	35	7	80	3	2
	Research improve quality of university teaching and learning and learning outcome	61	2	36	5	3
	Research into teaching should not be a separate process	31	9	59	19	9
	Research as a generator of learning outcome	65	1	3		

Discussion and new design approaches. These components take part in the learning outcome management process. It means that modern educational reforms have to promote increasing of a basis learning outcome because it must be linked with the market requirements. These approaches can be concidered as the indicators below:

1. Student-centered approach (pedagogy, curricula and related matters);

2. Teaching, learning and research should drive curricula design

Today, the labour market sets high demands on the kind of skills that graduates need to possess. Not every skill can easily be developed in HE. There are two main issues underlying the decision whether a skill should be developed in HE:

a/General academic skills and professional expertise that should be the main focus or goal of HE;

b/Strategic/ Innovative/creative skills.

The main reason is that HE is not the most effective developer of these skills since it

should be acquired through practice. The world is changing and the graduates have to develop ideas to meet those changes.

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Стаття надійшла до редакції 05.09.2016

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ДЕРЖАВНИЙ СТАНДАРТ ПІДГОТОВКИ ФАХІВЦІВ З ФІЗИЧНОЇ КУЛЬТУРИ І СПОРТУ ПОЛЬЩІ

Анотація

Аналізуються погляди польських вчених на підготовку фахівців з фізичної культури і спорту. Розкривається зміст Державного стандарту навчання до майбутньої професії вчителя. Систематизуються вимоги щодо підготовки викладачів фізичної культури і спорту за кваліфікаційним рівнем "бакалавр" та "магістр".

Ключові слова: Державний стандарт, підготовка, викладач, фізична культура, кваліфікаційний рівень.

Summary

The views of Polish scientists on the preparation of specialists in the sphere of physical culture and sports are analyzed. The content of the state standard of training to future profession of teacher is considered. The requirements for training of teachers of physical culture and sport according to qualification level "bachelor" and "master" are systematized. .

Key words: state standard, training, teacher, physical education, degree.