Approaches to the Modern University: Student Engagement in Learning Outcome for Knowledge Creation According to the Competitive Market Requirements

Ruizan Mekvabidze

Gori State Teaching University, 53 Chavchavadze Ave, Gori, Georgia, e-mail: gsu@grt.ge

(*Received Jun 2015, accepted Sep 2015*)

Abstract. 21st century Higher Education Institutions (HEIs) face a world that is more interconnected, one in which knowledge, creativity, research and innovation are the essential elements of societies. Globalization refers to become more and more integrated via moments of goods, capital, labor and ideas, education, and research. But, what do HEIs need to stay competitive as each individual has abilities, skills, experience, values and culture, which each uses to transform these information into knowledge?

Knowledge is considered to be one of the most important source for an individual and for any organization as socially constructed and embedded in practice. But knowledge is a systematically developing process in time and should be considered and understood as at the confluence of several sciences of disciplines each contributing in full concept with correspondence of theories, tools and new technologies that demand the changes of educational reforms and provide successful modification them.

The article describes initial development for knowledge creation that based on the education and research approach categories. Knowledge can be described as education, research with practice skills or combination of data and information to which skills and professional experience are added, and can be used for decision making. The studying is motivated by the fact that knowledge is formatting by contribution from several areas and from various levels of studying beginning from the secondary school. There is suggested that knowledge should be considered as a function of education (teaching-learning) and research approach categories.

The paper attempts to answer the questions: what are the aspects of knowledge creation; is the Modern Higher Education towards a knowledge creation; is the student motivated for knowledge creation and knowledge withholding in the frame of new educational reforms and how it will be done;

are the teacher and student main players in knowledge creation; can we assess knowledge by considering a teacher as a producer of knowledge and by considering a student as a co-producer of knowledge; can knowledge be considered as a function of Teaching-Learning-Research (T-L-R).

The article follows student engagement as a producer learning outcome. In the following discussion, authors explore theoretical and practical initiatives in student engagement, seek to draw attention to the student as consumer in the model of Modern Higher Education (MHE). Studies have shown: direct causal relationship between student's motivation, student's engagement in study process and student achievement; the knowledge creation through Teaching, Learning and Research with direction to the learning outcome; the critical aspects lifted forward in the syllabuses in educational science: Teaching, Learning, and research as the fundamental indicators in a broad way.

Keywords: Higher education, knowledge creation, knowledge withholding, teaching, research, learning student's engagement, learning outcome.

1. **Introduction**

Nowadays economics, research process and shaping of society is in transition to a new structure with a new set of rules provided by global economy and requirements of labor market. Relevant information and communication ability are the keys to economic and social growth because, it is not self-evident that the knowledge society will become an inclusive and empowering society, but we know that education is vital for the economic and social progress and for guaranteeing equal opportunities in our society. If we will consider teaching-learning-research and innovation as an engine for change, we need to undertake much more specific knowledge and promote innovation on a modern scale. One of the important challenges for higher universities today is their continuation as the main factor of society, providing the knowledge and educating for addressing complex global challenges. 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. An actual issue of contemporary universities is to narrow the gap between research and academic studies through a research-based approach to education by creating knowledge with environment that includes integration of research activity for innovations and better preparation of students as future professionals. This is called vertical integration and refers to programs in which research and education are coupled and in which students and academic staff are mutually supportive.

What should do HEIs to stay competitive and to ensure that a good academic experience will be a way for knowledge creation under new teaching-learning-

research approaches and manage studying environment. As knowledge develops under research and practice, HEIs must promote research and research design. But research requires conceptual understanding and it must be directed to discover the theory from data, data processing and obtain the results for innovation(Daniela,2012; Amy,2008).

Basic educational problems such as a trend of policy to labor market, practice and research has not adequately been addressed. The understanding of educational policy have to perceive synonymously with social welfare policy. For many educational policy makers and practioners, the conception of educational policy excludes economic development and economics, student's employability for competitive market and in this case, unforeseen problems.

For practical purposes of affecting real life behavior the person will use the knowledge to make decisions, solve problems and select actions. This, in turn, suggests that the level of certainty required to qualify as knowledge may be different depending upon the utility or importance of the consequences. The problem of knowledge has been addressed extensively by Ayer (1958). His approach is especially relevant to the topic of measuring knowledge. A personal knowledge with the aim of providing an expanded concept will allow more productive discussions of assessment, knowledge creation, knowledge management, individual or organizational performance (Darwin,2003). Knowledge and knowledge creation analyzes, teaching and learning processes, to identify the main trends of the development of education process for the competitive market environment, namely:

- Finding teaching approach for promotion and delivery of the high quality, student centered university teaching with academic research;
- Managing changes in higher education reform as a bridge between teaching and learning research, critical thinking and final knowledge in the frame of HE system as a supporter for the state as a driver of economic development.

From the realistic point of view educational reforms are directed to the creation of a modern competitive educational environment that provides knowledge creation. In the frame of the modern reforms, important changes are made to the transforming of education process which is connected to realization of the next important components:

- Growing requirements of the competitive markets;
- Fast development of Information and Communication Technology;
- Following Process of globalization.

A question is how it is possible to develop good progression of integration

knowledge, competencies of general educational science and subject knowledge.

The alignment in an educational context have to be good syllabuses, curricula and to be an effective instrument for transformation of learning outcome in knowledge. As a society becomes more knowledge intensive, and as our economy becomes ever for more knowledge dependent, the inevitable outcome is an increase knowledge options (Steyn, 2003). Options mean choices and that means decisions have to be made according to knowledge sharing and knowledge withholding that are the results of research and practice process, to identify the main trends of the development of education process for the competitive market environment because the critical aspects lifted forward in the syllabuses in educational sciences have to be: teaching, learning, research on the modern scale on one side and on the practice level - professional leadership on the second side. The first side is regulated initial knowledge and the second side is regulated by the factors as knowledge sharing and knowledge withholding contribute increasing of the initial knowledge. With increasing value put on knowledge as a key driver of productivity, many universities face new expectations from governments, employers to produce skill sets that can develop knowledge workers but Universities have to respond to the challenges of educating professionals for the knowledge economy by creating new degree programs (Subhabrata,2013).

Globalization and the need for changes of learning environments and teaching-learning context becomes the great challenge in higher education: What and how students learn and how the knowledge achieved is of importance. A crucial challenge to the theory development concerns how the components – teaching-learning-research are related with knowledge and how we can express this relationship and then, to assess it(Bigs,1996; Robert,2007; Beetham,2007; Mekvabidze,2013). As components of knowledge must be considered a teaching and learning and then a research and a practice as a process of developing new knowledge by gathering data that answers a particular questions. Research offers an opportunity to contribute to a body of knowledge and perhaps even influence change. It can be central to determining what we should do, what we can do, how we will do it, and how well we have done it. Analysis of the book "Teaching for Quality Learning at University"(John,2007) shows how the interaction between teacher and student can be organized to result in learning that enables students to approach the levels of understanding and problem solving that we hope will emerge from our teaching.

The determinants of teaching-learning-research and mathematical methods are analyzing the structural changes of students' assessment process in the

frame of the educational reforms. A question is how it is possible to develop good progression and integration of knowledge and competencies between general educational science and subject knowledge on one hand and good progression and integration of knowledge and competencies between teacher education and practice on the other. According to (Mekvabidze,2007; Mekvabidze, 2009)the alignment in an educational context have to be good regarding syllabuses, curricula and teaching, to be an effective instrument for development of learning and research focuses on knowledge creation (Bigs,1996). This means, that the different documents, steering education, need to be aligned in a meaningful way so that the most general document will show general learning outcomes guiding formulation of more concrete syllabus and learning outcomes. Course description should as well be a fruit of curricula and syllabuses, but also of teachers' experience and students' influence. The knowledge as result the learning outcome is the most powerful for the teachers to plan and direct the course and for the students to learn (Sternberg,1999). There are three critical aspects lifted forward in the syllabuses in educational science (Patrik,1988): teaching, professional leadership, Learning and research are fundamental aspects in a broad way in politics of education and any changes in society and for knowledge creation in wholly(Petter,2004; Yeh,2005; Eisenhardt,1989; Lin, 2001)

2. The student's role in the production of learning outcome

The Higher education reform is a fact of life. Global economic restructuring and fast Information and Communication Technology development are reforming all of society's institutions. Accordingly, the question for institutions of higher education is not whether or not to reform, but whether to reform purpose fully or passively, and if purposefully, towards what end. Sustainability Learning Environment 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. 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 (Astin,1984). Student's engagement has enjoyed

considerable attention in the literature since the mid-1990s, its begins from 'student's involvement' (Mullen, 2000). 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 (Markwell,2007). It is not difficult to understand why: 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 (Kuh,2007; Berger,1999). By Kuh "Student demonstrates that what students bring to higher education, or where they study, matters less to their success and development than what they do during their time as a student. If student engagement can deliver on its promises, it could hold the magic wand making all of this possible".

Coates, H. provides a more detailed consideration of engagement which encompasses five engagement scales, namely:

- Active and collaborative learning;
- Participation in challenging academic activities;
- Formative communication with academic staff;
- Involvement in enriching educational experiences;
- Feeling legitimated and supported by university learning communities.

This framework has been translated to form the basis of the National Survey of Student Engagement, which is an annual survey of higher educational institutions in the United States and Canada. A sixth aspect of engagement has been introduced by the Australasian Survey of Student Engagement namely work-integrated learning (the integration of employment-focused work experience into study) (Pike,2005).

It is interesting Contextualising Principles of Student Engagement in Learning and Teaching at the University of Sheffield: "Students are engaged in decision-making processes and are equipped with sufficient background knowledge to make effective contributions. Students are encouraged to initiate conversations, make suggestions and ask "why?" The learning and teaching environment is receptive to contributions made by students; Student engagement in learning and teaching is recognized and rewarded appropriately".

From 1990, reforms in education has overtaken in Georgia and involved different areas and taking off different forms. This process is continuing and some of the important questions regarding to educational reforms are without answers today. We far from the idea, that today we can create a real modern learning environment in HEI, as it is a problem with the number one, but we can

consider some of the characteristics for achieving some of the success for implementation them and state the demands for the current situation (Contextualising Principles): students' motivation in education; students' competitiveness according to demands of the labor market; what we demand from the modern university.

Education plays a crucial role in the development of economics and the workforce. The state of emergency of public education and the demand for its restructuring have to be the product of the current long-term period of economic and social stability. The crisis is reflected in the struggle over schooling, which, far from being incidental to the system today. The result has been to establish a commodified system, bringing education increasingly within the domain of the market with low level of education.

The analysis of the learning environment of education in the frame of educational reforms includes the tasks and questions to study a current T-L-R process at the universities (Barrne,2004; Beasley,1997; Mekvabidze,2011; Mekvabidze, 2009) what we need, what we teach and how it will be done; is the curricula satisfies the demands of competitive labor markets; how can be increased students' learning interests.

It is clear, that student has to master both basic and applied skills and focus them to problem solving and decision making, but the analysis of the transformation of education in the frame of new educational reforms have shown some of the defects and its aspects are mostly in two directions: curricula and syllabi design which could not merge a teaching-learning-research. Besides its, student learning outcome can be viewed as a response to the national (and international) thinking (Buckridge,2007) to explore the theoretical and practical initiatives and seek to draw attention to the student as a consumer in the model of Higher Education (HE). On one hand, however, a reason for arguing that, as far as the learning process is concerned, students are not well placed to exercise choice, because they do not have the necessary information and tools to use it to do so. On the other hand information provision stated learning outcomes and it is a mechanism for a dominant group who develops statement's understanding of the learning outcomes. But it is interesting how they are expressed it, as student's participation to take more responsibility for their learning, and to enhance his/her academic experience may be considered in the frame of as a students' motivation in education (Boyle,2007; Mekvabidze,2008).

3. **Knowledge as a learning outcome**

How HE policy can change socioeconomic background? We do not revise "What is education For? "Education in the largest sense is any act or experience that has a formative effect on the mind, character or physical ability of an individual" http://en.wikipedia.org/wiki / . But we stress on the necessity for providing of educational reforms for increasing of the indicated characters for social constructing and social transformation under 21st century demands. Knowledge as a learning outcome, first, it is addressed to the question about what teachers need to know concerning content. Of course, philosophers have answered this question in many different (Raths,2004): "Knowledge itself, as an inexhaustible commons available to all human beings, is, a global public good. For not only can knowledge not be regarded as a marketable good like others, but also knowledge only has value if it is shared by all [40] or "knowledge may engage in knowing" (Ortega,2002). The knowledge that is traditionally produced in the academy. It is based on the explanatory paradigm disciplinary based, theoretical produced "for its own sake" focused on understanding "what is" and its legitimacy is based on professional activities (Gibbons,1994).

A stock of Human Capital measured by the average years of education across the population is a fundamental determinant of economic growth and long-run living standards. To improve educational attainment means more skills, more productive persons that increase an economic productive capacity (OECD, 2010). These reasons were the basis of educational reforms: "Reforms of tertiary Education system has flagged as a priority in many continental European OECD countries". All informal and formal educational institutions belong to the knowledge industry. Student learning outcome is heavily dependent on effective teaching. Organized instruction, clear explanations, illustrative examples, and effective feedback on student work. Knowledge and information is being produced today. Indeed, new ideas and thinking, skills, innovative and so on are the elements of Knowledge. Today, one of the largest knowledge providers in the world is USA with the highest number of world class educational and research centers at this moment.

Knowledge is important in every aspect of life and is the driving force of today's changing. In total, knowledge units expertise and skills, experience, awareness by experience through education, the theoretical and practical understanding of a subject by a person. Furthermore, the knowledge is the source of any knowledge management program as if there is no knowledge, no management would be needed. Today knowledge has power. It controls access to opportunity and advancement http://www.brainyquote.com/quotes/quotes/

p/peterdruck54449.html)

Research questions in order to address the main purpose statement above are posed regarding the teachers mentioned in the purpose statement: Linking Teaching-learning activities. There are some questions on to this(Calvyn,2013):

- To what extent do the teachers match the learning outcomes and assessment standards they choose for their lessons to what is specified in the Revised National Curriculum Statement?
- To what extent do the teachers match the learning activities that they develop for their lessons to the learning outcomes specified in the Revised National Curriculum Statement?
- To what extent do the teachers match the assessment activities that they develop for their lessons to the assessment standards specified in the Revised National Curriculum Statement?
- To what extent do the learning activities and assessment activities that the teachers develop for their lessons relate to each other?

Higher education is fundamentally constituted by knowledge practices. Such practice often establishes the authority of knowledge based upon some criteria. In common sense understandings of higher education knowledge practices, academics are employed to generate and modify knowledge, assess and challenge it, and to help others to engage with it. The question is about whether we support a view of knowledge as a body of concepts. Higher education has become preoccupied with debates over the authority of knowledge and of criticality. The approaches to knowledge in higher education might benefit from a network sensibility that foregrounds the negotiated processes through which the material becomes entangled with the social to bring forth actions, subjectivities and ideas (Fenwick,2014).

4. Education and Research as the Main Aspects for Knowledge Creation

Globalization refers become more and more integrated. What do HEIs need to stay competitive as each individual has abilities, skills, experience, values and culture, which each uses to transform these information into knowledge (OECD, 2008; Chiwanza,2013; Mekvabidze,2012). The studying is motivated by the fact that knowledge is formatting by contribution from several areas and from various levels of studying beginning from the secondary school. In this paper is considered the attempt to answer on the questions (Mary,2012; Chetty 2010).

- What are the aspects of Knowledge Creation;

- Is the Modern Higher Education towards a Knowledge Creation;
- How can we assess Knowledge.

Global economic restructuring and fast Information and Communication Technology development are reforming all of society's institutions. Accordingly, the question for institutions of higher education is not whether or not to reform, but whether to reform purposefully or passively, and towards what end. Sustainability educational environment is a social reform movement that is seeking to change the way we learn and conduct our professional and civic lives. Sustainable learning environment is a fully integrated, "whole building" approach to design, construction, renovation and operation of curricula and syllabi.

It is essential to recall that the learning outcome depends on the learner's attitude. We believe that experiences and knowledge must become a part of teaching and learning (Cochran,2004; Grossman,2008). Globalisation and the need for curricula change becomes the great challenge in higher education. A crucial challenge to educational and curriculum thinking and theory development concerns how the formalities and exchanges, are related to knowledge creation (Lankshear,2002; Peter, 2007).

There is a lot of evidence that more people are seeing Teaching and research as separate activities. But in a wider intellectual sense they cannot be separated. The core of this argument is that, although in the policy domain teaching and research may be being driven apart, in the intellectual domain they are becoming increasingly interwoven (Middleton,2007). Lots of teaching is becoming more research like, as lots of research is becoming more teaching like. And more, these features are in the strong connect with knowledge and they may be linked (Murray,2008). There are the next stages in this argument (Griffith,2004; Simons,2006; Velez,1996).

- Relationship between teaching-learning and research – teaching;
- Unpacking what we mean in the frame of teaching-learning and teaching – research;
- Discussion which we called 'knowledge' and 'knowledge production'.

There are proposed four models of the links between teaching and research:

1) Teaching can be research-led in the sense that the curriculum is structured around subject content, and the content selected is directly based on the special research interests of teaching staff;

2) Teaching can be research-oriented in the sense that the curriculum places emphasis as much on understanding the processes by which knowledge is produced in the field as on learning the codified knowledge;

3) Teaching can be research-based in the sense that the curriculum is largely designed around inquiry based activities , rather than on the acquisition of subject content, the experiences of staff in the processes of inquiry are highly integrated into the student's learning activities;

4) Teaching can be research-informed in the sense that it draws consciously on systematic inquiry into the teaching and learning process itself.

To teach effectively at the university level we have to be engaged in research. The research involves knowledge in practical situations and using a knowledge base to dive solutions to new problems. The implementation into practice promotes making autonomous decisions in responsible meaningful activity. The relationships between teaching and research, teaching-learning teaching – learning-research to be designed in ways that accept and utilise learner variation. Students need problem solving, critical thinking and learning-to-learn in their employment. Different authors gives various aims of teaching thinking. The key function of education is to teach students to think critically, creatively and effectively as teaching thinking enables students to utilise new information in new situation (Rees,2007).

In the present study, it is hypothesized that, student receives positive outcomes by engagement in a conceptual learning outcome (Hyungshim,2008).We have to try define correlation between the parameters that influence on the formation of knowledge by requirements of competitive market and to answer on the questions below:

- Can we assess the quality of students' motivation of engagement in curriculum transformation for the production of student's learning outcome?

- Can we create knowledge as student's learning outcome in the frame of the present study?

- Can we make decision how to develop student's competencies and to prepare them for competitive labour market?

- Can we define the relationship between student's engagement in knowledge creation and the learning outcome performance?

5. Supporting Students' Engagement in curricula transformation for knowledge creation

Students' are active participants in the learning process, constructing and shaping their own prior knowledge and new experiences Students with a well-developed ability can manage their own learning and are able to choose

appropriate learning goals, to use their existing knowledge and skills to direct their learning, and to select learning strategies (Tanner,2009). To do this they must be able to establish goals, persevere, monitor their progress, adjust their learning strategies as necessary and overcome difficulties in learning. Therefore, student have to understand and develop strategies that will best enhance student's learning outcome (Gary,2012).

How teachers learn to engage students in active learning process and what are the goals of teaching for supporting student's active engagement in learning? (Robertson,2007). According to the educational reform agenda and educational researchers an active engagement in learning process is an important goal for students. But, in this case, we can answer on the questions:

- How do teachers engage students in active learning?
- How do teachers learn to help students become actively involved in learning?
- How teachers learn to teach subject matter in ways that actively engage students in Learning?

This shift in understanding a new form of learning is an important new direction for teacher learning. Today, it is necessary to examine various approaches to teacher education that promotes the active engagement that can lead students to make their own knowledge as learning outcome, with the flexibility to respond to new situations of further learning. Students with a well-developed ability can manage their own learning, to choose appropriate learning goals and to select own learning strategies (Robinson,2006).

Educational reform unites the calls many directions, notably of business, where knowledge is a growing demand for employees with modern thinking and responsibilities, with abilities identifying and solving problems and critically reflecting on their own individual and collaborative performance.

In the frame of the modern educational reforms have to be realized student's active engagement in learning that provides them with the need skills and prepares them to competently meet the challenges and changes occurring in the work place.

6. Research framework

The rapid emergence of the knowledge economy has changed the dynamics between governments, industry and universities and influenced the educational needs of managers and management researchers. The interests in management education is directed to knowledge creation for the designing context and

content of knowledge in the new economy in which a great deal of productivity gains result from technologies of knowledge generation and information processing. This reframing of knowledge as a source of productivity has had significant effects in terms of investments in education, research and development. Universities, as major centers of knowledge creation have also responded to the needs of knowledge economy by their knowledge creating capabilities.

Based on the theories reviewed from the literature and modified to suit the study for university level, the research framework design for the study is presented by figure 1.
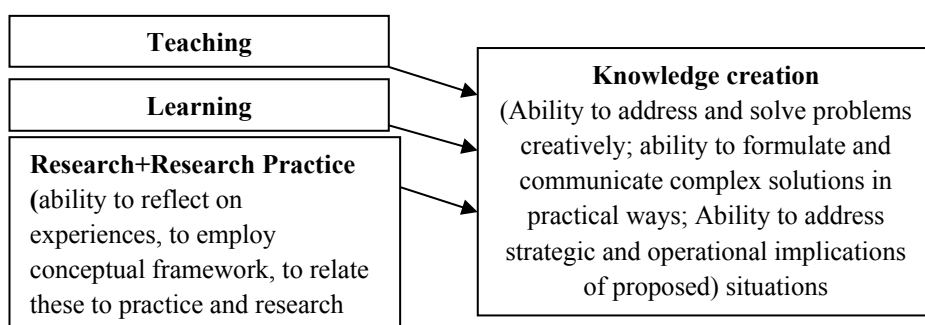
Figure 1. Research framework

Consequently, three factors were considered as independent variables (Teaching, Learning, Research). In this study will be examined the effect of these variables on the dependent variable, which is knowledge creation. The study seeks behavior of faculties and students according to knowledge creation and next relationships indicated below: between Teaching and knowledge creation; between Learning and knowledge creation; between Research and knowledge creation.

7. Research Methodology

To find a way to study (promote) students' and teachers' motivations to student's knowledge creation by the achieved learning outcomes on the basis of relationship teaching-learning-research as knowing, that are:

- Teaching is to focus classroom activities on reasoning and the evaluation of evidence, thus allowing students the opportunity to develop the ability to formulate and solve problems;
- Learning is to focus student activities on empowering student's ability

about the problem is and how it might best be approached;

- Research enable students to clarify and expand on ideas; to demand, as well as to provide, supporting evidence or reasons for comments and opinions; and to determine whether or not an argument is reasonable and a conclusion well-founded.

The aim of this research is to draw the student's engagement as a consumer's objective for model building "producer-co-producer-consumer". We explore theoretical and practical initiatives in student engagement and are considered:

- Student as a co-creator of curriculum: vision to knowledge;
- Student as a co- producer of knowledge: vision to the employability;
- Student as a supporter of the drives for changes: vision for enhanced knowledge;
- Teacher as a creator of curriculum: vision to knowledge;
- Teacher as a producer of knowledge: vision to the employability;
- Teacher as a contributor of the drives for changes: vision for enhanced knowledge.

In the frame of the research was conducted: preparing two questionnaires for the academics and students separately; research design; research instrumentation; data collection by questionnaires according to the sample size; data processing using STATA; analysis; discussion; conclusion.

Sample size criteria. Three criteria usually will need to the specified to determine the appropriate sample size: the level of precision; the level of confidence; the degree of variability.

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 (the universe)

e - the acceptable sampling error

The study developed two types surveys design for academics and for students. The samples are formed from:

- Three categories of faculty members (Professors, Ass. Professors, Invited teachers) of Gori State University were selected. Developing questionnaires as the data-gathering tool (35 copies) was spread. All copies were returned, giving a response 100%.
- Third and fourth year students from three faculty (Social Sciences, business and law; Humanity; Education and Exact and Natural Sciences)

of Gori State University were selected. Developing questionnaires as the data-gathering tool (96 copies) was spread. All copies were returned, giving a response 100%.

Developing questionnaires used as survey tool for this study was made up 19 items for students and 26 items for academics into different sections. The first section of each questionnaire consists 11 identical questions. The response options into second section 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 using Cronbach's alpha. The results of Cronbach's alpha are given in table1 below.

Table1. Reliability analysis of the indicators

#	Variables	Number of Items	Alpha
1	Teaching	6	0.70
2	Learning	8	0.83
3	Research	12	0.72

8. Discussion of findings

Demographic information of respondents. The result of demographic information of respondents showed that more female (67.94%) faculty members participated in the survey compared to male counterparts (32.06%). The results are given in the table 2.

Table 2. Demographic information (according public institution results)

Demographic categories	Classification	Frequency	%
Gender	F	89	67.94
	M	42	32.06
HE qualification	BA (3rd and 4th year)	55	57.29
	MA	35	36.46
	PhD	6	6.25
Status	Invitation teacher	10	28.57
	Ass. Professor	14	40.00
	Professor	11	31.43
Teaching experience	Above 20 years	6	17.14
	15-20 years	8	22.90
	11-15 years	9	25.70
	5-10 years	5	14.28
	Under 5 years	7	20.00

Knowledge creation as a function of sample type. The interesting question of the work is an answer whether there is a significant impact of sample type on the knowledge creation. An independent sample t-test was carried out on the data. The mean values of knowledge creation behavior of academics and students are closely related. The results are given in the table 3. The Relation also confirmed the t-test (Table 4).

Table 3. Group statistics

	Type of samples	N	Mean	Std. Deviation	Std. Error mean
Knowledge creation	Academics	35	4.0423	0. 79190	0.04912
	Students	96	4.0570	0..82671	0.06931

Table 4. Independent sample t-test

Knowledge creation	t-test for Equality of Means		
	T	Df	Signific. (2 tailed)
	0. 2137	129	0.7998

Analysis of indicators of knowledge creation was used to explore the degree of consensus on the indicators of each variable (Teaching, Learning, Research). Review of the indicator statements related to the teaching of academics and students shows that in general most academics and students have a positive towards knowledge creation. Respondents expressed higher consensus of agreement on the statements (table 5):

- A movement of knowledge to learners may be provided through teaching and other mediums such as seminars, workshops, conferences and project-based work - 80.15%;
- Effective strategy for knowledge creation is a research into teaching- 73.54%;
- Teaching interact with research – 65.64%;
- Knowledge should flow from teaching to research – 61.07%;
- Research into teaching as a knowledge transfer process – 58.78%;
- Knowledge-based views with respect to research –teaching-learning link - 58.11%.

Review of the indicator statements related to the learning – knowledge creation of academics and students shows that in general most academics and students have a positive towards knowledge creation. As, in this case we want to state their point of view from the side of learning - knowledge creation and

research - knowledge creation, we repeat two questions into the series. The results are given in the table 6 and table 7 and indicates that statement of the questions are right:

- A movement of knowledge to learners may be provided through teaching and other mediums such as seminars, workshops, conferences and project-based work - 80.14%;
- Knowledge-based views with respect to research –teaching-learning link - 67.17%;
- A movement of knowledge to learners may be provided through teaching and other mediums such as seminars, workshops, conferences and project-based work - 80.15%;
- Knowledge-based views with respect to research –teaching-learning link - 58.78%.

Table 5. Academics and students according to knowledge creation through teaching: analysis of the teaching indicators (N=131)

variable	Indicators	Frequency and %				
		SA	A	N	DA	SD
TEACHING Towards knowledge creation	Effective strategy for knowledge creation is a research into teaching	70 (54.44%)	25 (19.10%)	15 (11.45%)	15 (11.45%)	6 (4.58%)
	Research into teaching as a knowledge transfer process	45 (34.35%)	32 (24.43%)	26 (19.85%)	20 (15.27%)	8 (6.11%)
	A movement of knowledge to learners may be provided through teaching and other mediums such as seminars, workshops,	75 (57.25%)	30 (22.90%)	26 (19.85%)	0 0%	0 0%

conferences and project-based work					
Knowledge-based views with respect to research and teaching link	48 (36.64%)	28 (21.37%)	35 (26.72%)	10 (7.63%)	8 (6.11%)
Teaching interact with research under knowledge	67 (51.14%)	19 (14.50%)	24 (18.32%)	12 (9.16%)	9 (6.87%)
Knowledge should flow from teaching to research	36 (27.48%)	44 (33.59%)	42 (32.06%)	7 (5.34%)	2 (1.53%)

Table 6. Academics and students according to knowledge creation through Learning Analysis of Learning Indicators (N=131)

variable	Indicators	Frequency and %				
		SA	A	N	DA	SD
LEARNING Towards knowledge creation	Critical thinking stimulate students' to provide them for learning and knowledge.	47 (35.60%)	48 (36.64%)	20 (15.27%)	10 (7.63%)	6 (4.58%)
	Student-focused teaching is suggested by many pedagogical researchers as the most effective for student's learning process	55 (41.98%)	49 (37.40%)	29 (22.14%)	5 (3.82%)	0 0%
	Movement of knowledge to learners may be provided through teaching and	68 (51.90%)	37 (28.24%)	16 (12.21%)	0 0%	0 0%

other mediums such as seminars, workshops, conferences and project-based work					
Is the knowledge-based views with respect to research-teaching – learning link	46 (35.11%)	42 (32.06%)	30 (22.90%)	9 (6.87%)	4 (3.05%)
learning interact with teaching and research	33 (25.19%)	46 (35.11%)	29 (22.14%)	23 (17.56%)	0 0%
Learning interact with teaching	66 (50.38%)	43 (32.82%)	15 (11.45%)	6 (4.58%)	1 (0.76%)
Effective way to link research and teaching is benefit of student learning	72 (54.96%)	51 (38.39%)	8 (6.11%)	0 0%	0 0%
Research improve quality of university teaching and learning	61 (46.56%)	48 (36.64%)	22 (16.79%)	0 0%	0 0%

Table 7. Academics and students according to knowledge creation through Research Analysis of Research Indicators (N=131)

variable	Indicators	Frequency and %				
		SA	A	N	DA	SD
RESEARCH Towards knowledge creation	Effective strategy for knowledge creation is a research into teaching	67 (51.14%)	33 (25.19%)	21 (16.03%)	15 (11.45%)	5 (3.82%)
	Research into teaching as a	48 (36.64%)	39 (29.77%)	24 (18.32%)	15 (11.45%)	5 (3.82

knowledge transfer process					%)
A movement of knowledge to learners may be provided through teaching and other mediums such as seminars, workshops, conferences and project-based work	73 (55.72%)	32 (24.43%)	23 (17.56%)	3 (2.29%)	0 0%
Knowledge-based views with respect to research and teaching link	50 (38.17%)	27 (20.61%)	33 (25.19%)	12 (9.16%)	9 (6.87%)
Teaching interact with research	75 (57.25%)	20 (15.27%)	15 (11.45%)	18 (13.74)	3 (2.29%)
All academics have to be good researchers	67 (51.14%)	38 (29.00%)	21 (16.03%)	10 (7.63%)	0 0%
Research improve quality of university teaching and learning	56 (42.75%)	32 (24.43%)	30 (22.90%)	11 (8.40%)	2 (1.53%)
Interact through face-to-face settings to disseminate research knowledge	49 (37.40%)	38 (29.00%)	33 (25.19%)	8 (6.11%)	5 (3.82%)
Research into teaching should not be a separate process	21 (16.03%)	18 (13.74)	41 (31.30%)	32 (24.43%)	9 (6.87%)
In a 'knowledge society' all students – certainly all graduates – have to be researchers	60 (45.80%)	22 (16.79%)	45 (34.35%)	9 (6.87%)	5 (3.82%)

| | Research interact with teaching | 60 (45.80%) | 22 (16.79%) | 45 (34.35%) | 9 (6.87%) | 5 (3.82%) |
| | Research as a generator of knowledge | 68 (51.90%) | 41 (31.30%) | 20 (15.27%) | 2 (1.53%) | 0 0% |

Thus, we can present the results by variables and indicators more clearly as we assume that the answers on strongly agree (SA) and agree (A) are the positive answers (we call it "Yes") and disagree (DA) and strongly disagree (SDA) as a negative answers (we call it "No"). The results are given in the table 8.
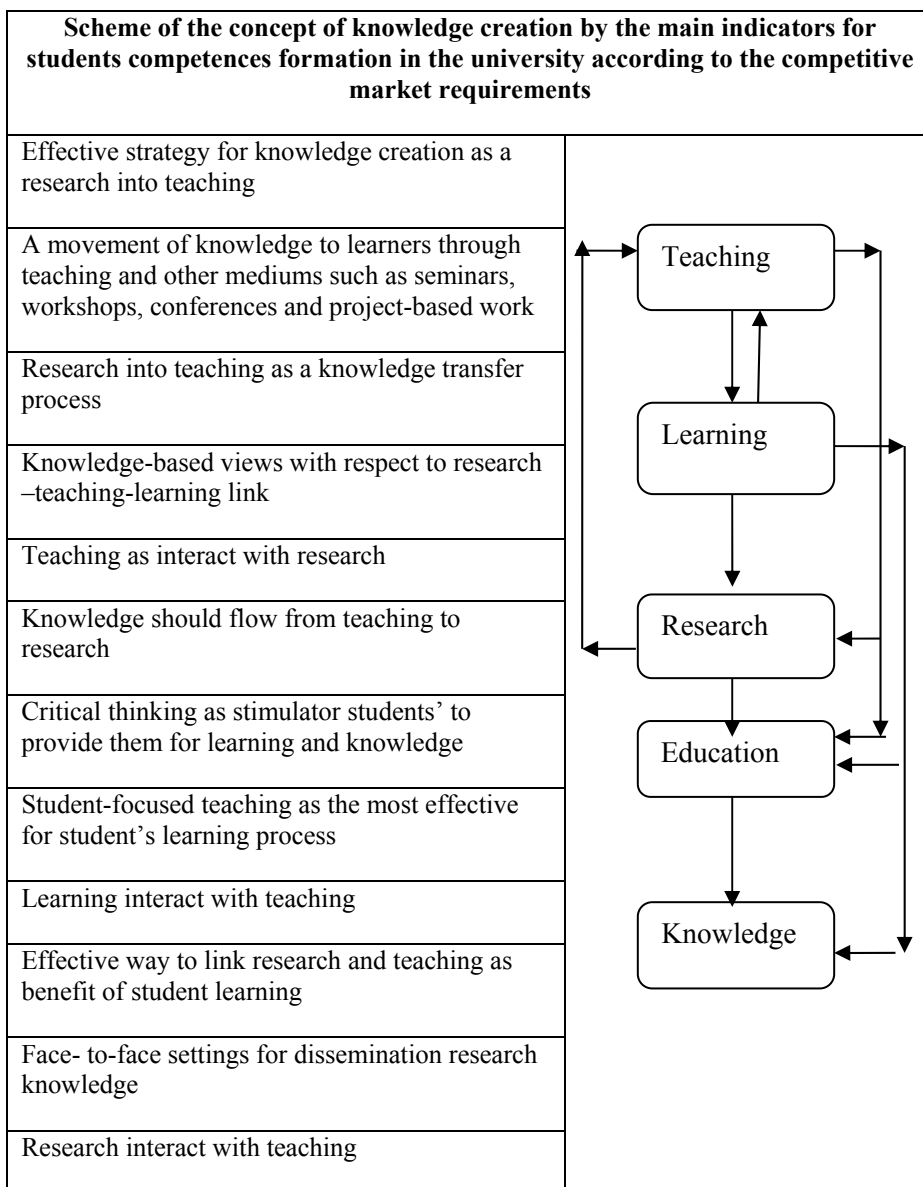
Table 8. Academics and students according to knowledge creation through T-L-R: analysis of research indicators (N=131)

Variable	Indicators	Percent	
		Yes	No
Teaching-Learning-Research To knowledge creation	A movement of knowledge to learners may be provided through teaching and other mediums such as seminars, workshops, conferences and project-based work	80.15 80.15 80.14	0.00 0.00 0.00
	Knowledge-based views with respect to research –teaching-learning link	58.78 58.01	16.03 13.74
	Effective strategy for knowledge creation is a research into teaching	73.54 76.33	16.03 15.12
	Research into teaching as a knowledge transfer process	56.41	15.27
	Teaching interact with research	72.52	16.03
	All academics have to be good researchers	80.14	7.00
	Research improve quality of university teaching and learning	67.18	9.93
	Interact through face-to-face settings to disseminate research knowledge	56.40	9.93
	Research into teaching should not be a separate process	29.77	31.30
	In a 'knowledge society' all students –certainly all graduates – have to be researchers	62.59	10.69
	Research interact with teaching	52.59	10.69
	Research as a generator of knowledge	83.20	1.53
	Research into teaching as a knowledge transfer process	58.78	21.38
	Teaching interact with research1	65.64	16.03
	Knowledge should flow from teaching to research	61.07	6.87

	Critical thinking stimulate students' to provide them for learning and knowledge.	72.24	12.21
	Student-focused teaching is suggested by many pedagogical researchers as the most effective for student's learning process	79.38	3.82
	learning interact with teaching and research	60.30	17.56
	Learning interact with teaching	83.20	5.34
	Effective way to link research and teaching is benefit of student learning	93.35	0
	Research improve quality of university teaching and learning	83.20	0

Knowledge is regarded as one of the most important strategic resources today. Commercial or academic organizations base their capabilities in integrating information and knowledge that is considered as positively related with the performance of organization. Knowledge and knowledge sharing are the main points of knowledge management and often are the subject of discussions. Increasing peoples' value for knowledge and withholding it is considering more intensively at higher university level as universities are the main objects for knowledge creation. In the context of higher universities together with academics, students are a center of knowledge creation and they have to help in improving knowledge status within the university environment. In total, knowledge units expertise, skills, experience, awareness through education, the theoretical and practical understanding of a subject by a person.

Through education and research person evaluates two major steps that are important and are responsible for knowledge storage. On the first step are considered: Knowledge creation; Knowledge acquisition. By the considered indicators for T-L-R, this step may be presented by the scheme 1 below.

Scheme of the concept of knowledge creation by the main indicators for students competences formation in the university according to the competitive market requirements	
Effective strategy for knowledge creation as a research into teaching	
A movement of knowledge to learners through teaching and other mediums such as seminars, workshops, conferences and project-based work	Teaching
Research into teaching as a knowledge transfer process	
Knowledge-based views with respect to research –teaching-learning link	Learning
Teaching as interact with research	
Knowledge should flow from teaching to research	Research
Critical thinking as stimulator students' to provide them for learning and knowledge	
Student-focused teaching as the most effective for student's learning process	Education
Learning interact with teaching	
Effective way to link research and teaching as benefit of student learning	
Face- to-face settings for dissemination research knowledge	Knowledge
Research interact with teaching	

Second step includes the components: knowledge adoption; knowledge evaluation. These components take part in the knowledge management process. Therefore, the knowledge that a graduate gained on the university level is the source of any knowledge management program as if there is no knowledge, no management would be need.

9. Conclusions

In general, on the university level, knowledge accumulation occurs that is used as the basis on the next step, on the level of management and decision making. It means that modern educational reforms have to promote increasing of a basis knowledge because the result must be linked with employment of graduates.

Knowledge creation on the modern university level is a key of educational environment, today and contributes intensively towards graduates performance for the competitive market and employability. The paper has revealed the importance of variables teaching-learning-research that are responsible for knowledge asset on the first step. This accumulation of the knowledge as a store for its management and decision making, adoption and evaluation on the work place that may be considered as knowledge – driven process.

Bearing in mind the importance of the problem, it is advisable to extend the frame of the experiment to obtain more significant results and simultaneously turn on the problem of assessing graduates' knowledge by GPA that it is not quite realistic assessment today. This question has long been a subject of discussion of universities of Europe and USA.

References

Amy Scott Metcalfe, Tara Fenwick (2009). Knowledge for whose society? Knowledge production, higher education, and federal policy in Canada. High Educ (2009) 57:209–225 DOI 10.1007/s10734-008-9142-4 (Published online: 9 Ayer, A.J. (1958). The Problem of Knowledge. Macmillan and Company, LondonMay 2008 Springer Science+Business Media B.V. 2008)

Astin, A. W.(1984). Student Involvement. A Developmental Theory for Higher Education. Journal of College Student Development, 25, pp. 297-308

Barrne, S. (2004). A Research Based Approach to Generic Graduate Attributes Policy. Higher Education Research and Development, 23: 261-276

Beetham H. and Sharpe R. (2007). Rethinking Pedagogy for a Digital age: Designing and Delivering e-Learning. London. Routledge

Berger, J.B. and Milen, J.F.(1999). The Role of Student Involvement and Perceptions of Integration in a Causal Model of Student Persistence. Research in Higher Education. 40(6), pp.641-664

Bigs, J.B. (1996b) Enhancing teaching through constructive alignment. Higher Education, 32: 1-18

Beasley, Colin, J.(1997). Students as Teachers: The Benefits of Peer Tutoring. The Proceedings of the 6th Annual Teaching Learning Forum, February, Murdoch   University   1997 http://ctl.curtin.edu.au/events/conferences/tlf/tlf1997/contents.html

Boyle. A. (2007). Using Alignment and Reflection to Improve Student Learning Elements, 3 (2):113-117

Buckridge, M. and Guest, R.(2007). A Conversation about Pedagogical Responces to increased Diversity on University Classroom. Higher Education Research and Development, 26:133-146.

Calvyn Potgieter (2013). Linking learning activities and assessment activities to learning outcomes and assessment standards when teaching technology: A case study. International Journal of Technology& Design Education. Vol.23(4):969–986 DOI 10.1007/s10798-012-9226

Chetty, R., and F. Lubben. 2010. The scholarship of research in teacher education in a higher education institution in transition: Issues of identity. Teaching and Teacher Education 26, no. 4: 813–20.

Chiwanza K. (2013). Challenges in Preserving Indigenous Knowledge Systems: Learning from Past Experience: Information and Knowledge Management, 3(2): 19-26

Cochran-Smith, M. 2004. Ask a different question, get a different answer. The research base for teacher education. Journal of Teacher Education 55, no. 2: 111–15.

Coates, H. (2007). A model of online and General Campus-Based Student Engagement, Assessment and Evaluation in Higher Education, 32(2), pp. 121-141

Contextualising Principles of Student Engagement in Learning and Teaching at the   University   of   Sheffield (http://www.shef.ac.uk/lets/strategy/projects/studentengagement)

Daniela L. Nastasie (2012). Australian information education in the 21st century – the synergy among research, teaching and practice. Education for Information 29 (2012) 271–286 271 DOI 10.3233/EFI-130938 IOS Pres

Darwin P. Hunt (2003). The concept of knowledge and how to measure it. Journal of Intellectual Capital Vol.4. #1.pp. 100-113. DOI 10.1108/14691930310455414.

Eisenhardt , K.M.(1989). Building Theories from case study research. Academy of management review, 14 (4), 352-550

Fenwick, Tara& Edwards, Richard (2014). ; CURRICULA (Courses of study) -- Aims & objectives; THEORY of knowledge; Higher Education. Vol. 67 Issue 1, p35-50. DOI: 10.1007/s10734-013-9639-3.

Gary R. Pike • John C. Smart • Corinna A. Ethington (2012).The Mediating Effects of Student Engagement on the Relationships Between Academic Disciplines and Learning Outcomes: An Extension of Holland's Theory. Res High Educ (2012) 53:550–575. DOI 10.1007/s11162-011-9239-y. _ Springer Science+Business Media, LLC

Gibbons, M., Limoges, C., Nowotny, H., Scott P., Schwartzman, S., & Trow, M. (1994) The new Production of Knowledge. The Dynamics of Science and Research in Contemporary Societies. SAGE Publications Ltd

Grossman, P., and M. Mcdonald. 2008. Back to the future: Directions for research in teaching and teacher education. American Educational Research Journal 45, no. 1: 184–205.

Griffith, R. (2004). Knowledge production and research-teaching nexus: the case of the built environment disciplines. Studies in Higher Education, 29(6), pp.709-726

Hyungshim Jang, (2008).Supporting Students' Motivation, Engagement, and Learning During an Uninteresting Activity. Journal of Educational Psychology Copyright 2008 by the American Psychological Association2008, Vol. 100, No. 4, 798–811

John Biggs&Catherina Tang, (2007). Teaching for Quality Learning at University."What Student Does?" Fourth Edition. Society for Research in Higher Education& Open University

Keyan G. Tomaselli (2014) Who owns what? Indigenous knowledge and struggles over representation. Critical Arts: A South-North Journal of Cultural and Media Studies, July1

Kuh, C. D.(2007). How to Help Students Achieve. Chronicle of Higher Education. Based on Coates, H. A model of online and General Campus-Based Student Engagement, Assessment and Evaluation in Higher Education, 32(2), pp. 121-141

Lankshear, C., Peters, M., & Knobel, M. (2002). Information, knowledge and learning, In M. Lea, & K. Nicoll (Eds.), Distributed learning: Social and cultural approaches to practice. London: Routledge

Lin, W. P.(2001). The effect of technique knowledge integration, knowledge power and organizational learning on core competence and innovation performance. National Cheng Kung University

Markwell, D. (2007) . The changes of Student Engagement. Keynote address at the Teaching and Learning Forum. University of Western Australia, 30-31 January

Mary F. Hill and Mavis A. Haigh (2012). Creating a culture of research in teacher education: learning research within communities of practice. Studies in Higher Education Vol. 37, No. 8, December, 971–988

Mekvabidze Ruizan (2012). Teaching tomorrow-today: Integration teaching, learning and research through management and corporative relations. International Euro-American conference provided by " International journal of Art and Sciences". Roma, October 29-November 1, 8A4.

Mekvabidze R., Mekvabidze P. (2007) New trends in higher education: QEM (Quantitative economic models). The 4th international Silk Road Symposium provided by Ministry of Education and Science of Georgia and International Black Sea University. 4-6 May, Pp.13-18

Mekvabidze. Ruizan and Mekvabidze, Pikra (2009).The Aspects of Globalization of Economic Processes. Co-Authored. International Scientific - Practical Conference "Globalization, World Crisis and South Caucasus. Kutaisi, Publishing House: "Innovation"16-17 May, pp.82-87.

Mekvabidze, R. (2013) Thinking about learning environment of the 21th century. 5th International Conference of Education and New Learning Technologies. Barcelona, 1-3 July

Mekvabidze, R., Duruli Ts., (2011). In the Frame of the Educational Reforms in Georgia: In pursuit of Sustainable Learning Environment. International Conference " The Future of Education". 16-17 June, , Florence, Italy. http://www.pixel-online.net/edu_future/acceptedabstracts.php „Innovative Teaching and Learning Methodologies".

Mekvabidze R. (2009). Following Educational Reforms in Georgia: The Role of Decision Making for Economic Educatin. Second International conference of Gori University, 30 October

Mekvabidze,R., Tsotniashvili, Z. (2008).Transformation of education in the frame of the developing ICT. The conference Materials of University of Georgia, 18 May, 2008. pp.21-25 (in Georgian).

Middleton, S. 2007. Researching teaching and teaching research: On the subject/s of education. Paper presented at the Marwell Conference, April 21, in Winchester, UK

Murray, J., A. Campbell, I. Hextall, M. Hulme, M. Jones, P. Mahoney, I. Mentor, R. Proctor, and K. Wall. (2008). Mapping the field of teacher education research: Methodology and issues in a research capacity building initiative in teacher education in the United Kingdom. European Educational Research Journal 7, no. 4: 459–74

Mullen, C. A.(2000). Linking Research and Teaching: A Study of Graduate Student Engagement. Teaching in Higher Education. 5(1), pp. 121-141

OECD, 2008. Tertiary Education for the knowledge Society. OECD Thematic Review on Tertiary Education: Synthesis Report, April, 2008. http://www.oecd.org/dataoecd/20/4/40345176.pdf

OECD, 2010. http://www.brainyquote.com/quotes/quotes/p/peterdruck154449.html

Ortega Gasset, Jose Garcia-Gomez(2002) What is Knowledge? Translated and Edited by Jorge Garcia – Gomez . State University of Neww York Press. ISBN: 9780791451717. 9780585443096. 9780791489574.

Patrik Reany (1988). What is Knowledge? Arizona Jpournal of Natural Philosophy, Vol. 2, March, pp. 7-14

Peter John Williams, (2007). Valid knowledge: the economy and the academy. High Educ (2007) 54:511–523 DOI 10.1007/s10734-007-9051-y. (Received: 12 July 2006 / Accepted: 15 January 2007 / Published online: 8 February 2007 Springer Science+Business Media B.V. 2007

Petter Scott (2004). Knowledge work in a Knowledge society: Rethinking the links between University teaching and Research. The Higher Education Academy Learning and Teaching Conference 2004.29 June-1 July, The University of Hertfordshire.

Pike, G. R. and Kuh, G. D. (2005). A Typology of Student Engagement for American Colleges and Universities. Research in Higher Education. 46(2), pp. 185-209.

Raths, James D. and McAninch, Amy C. (2004). What Counts as Knowledge in Teacher Education? eBook Academic Collection (EBSCOhost). ISBN: 9781567504255. 9781576504246. 9781607528135.

Rees, G., S. Baron, R. Boyask, and C. Taylor. 2007. Research-capacity building, professional learning and the social practices of educational research. British Educational Research Journal 33, no. 5: 761–79

Robert Jones (2007). New Terms of Research and Knowledge Production in Scotland: The discourse of knowledge transfer. Discourse: studies in the cultural politics of education Vol. 28, No. 1, pp. 101-120. Routledge

Robertson, J. 2007. Beyond the 'research/teaching' nexus: Exploring the complexity of academic experience. Studies in Higher Education 32, no. 5: 541–56.

Robinson, M., and W. Mcmillan. (2006). Who teaches the teachers? Identity, discourse and policy in teacher education. Teaching and Teacher Education 22, no. 3: 327–36.

Simons, M. (2006). "Education through research" at European Universities. Notes on the orientation of academic research. Journal of Philosophy of Education. 40(1), pp.31-50

Steyn, G.M. (2003) Creating Knowledge Trough Management Education: A case Study of Human Resource Management. By:, Education, 00131172, Spring 2003, Vol. 123, Issue 3

Sternberg, R. J. and Lubart, T.I.,(1999),The conception of creativity: Prospects and Paradigms . In R.J. Sternberg (Ed.) Handbook of Creativity (pp.3-15), Cambridge, UK: Cambridge University Press

Subhabrata Banerje&Clive Morley (2013). Professional Doctorates in Management: Toward a Practice-Based Approach to Doctoral Education. Academy of Management Learning&Education. Vol. 12, #2,pp.173-193. http://dx.doi.org/10.5465/amle.2012.0159

http://fsse.iub.edu

http://nsse.iub.edu/pdf/NSSE%20LFF%20Transitioning%20to%20the%20Updated%20NSSE.pdf

Tanner, H., and S. Davies. (2009). How engagement with research changes the professional practice of teacher-educators: A case study from the Welsh education research network. Journal of Education for Teaching 35, no. 4: 373–89

Velez, W. Y. (1996). Integration of Research and Education. What does it mean and how can it be accomplished? Notices of the American mathematical Society. 43(10)pp.1142-1146.

Yeh, Y.C. (2005). The effects of Organizational Structure, leadership, strategy and creativity mechanism on the innovation performance. National Cheng Kung University