TRANSFORMATION OF EDUCATION IN CONTEXT OF THE COMPETITIVE JOB MARKET REQUIREMENTS: AN ANALYSIS OF THE UNIVERSITY POTENTIAL IN TERMS OF DEVELOPING RESEARCH SKILLS FOR STUDENTS

Ruizan Mekvabidze

Gori State Teaching University,
Faculty of Social Sciences, Business and Law,
Chavchavadze str. 53, 1400, Gori, Georgia
gsu.icic@gmail.com

Roman Smietanski

Opole University of Technology ,
Faculty of Economics and Management,
Department of Enterprise Management E-Business and Electronic Economy,
Luboszycka str. 7, 45-036, Opole, Poland
r.smietanski@po.edu.pl

Abstract

The research paper analysis an approach to the finding of the relationship between the modern higher educational trend of research and research in practice to the modern competitive job market requirements. Research methodology considers the next steps: preparing an online questionnaire with statements/indicators for the three categories of respondents (academics, graduates, MA students), using the Likert scale, and data processing with STATA. Study shows and the results are visible that the needed professional skills creation are required to adapt and transform the teaching of research in the "Research and Research in Practice" by the subjects area of specialism that will form graduates' practical, logical, analytical skills and creativity for the expected professional level.

Keywords: *Transformation Higher Eeducational Trend, Integration of „Research and Research in Practice" Components, Formation of Specialists for the Job Market.*

INTRODUCTION

Today, the labor market demands the matching of high-level technical and professional skills of workers with their qualifications. But, such skills are associated with higher education through Teaching-Learning-Research, and Research in Practice integration [Mekvabidze R., 2016] that it is critical to developing research teaching and research in practice that provides students with critical and logical thinking as well as a practical consideration, as it is clear that resources must be mobilized to meet rising job market demands. We cannot solve the problems without research and research in practice with its statements or indicators, without the transformation of study programs, without the adaptation of higher education to the rapid development of information technology (IT) and modern competitive job market requirements as the study program provides growing knowledge with professional skills [Mekvabidze R., 2016]. It is clear, that "Research and Research in Practice" include the development of skills and professional experience and can be considered as an essential aspect of the logical thinking formation needed for the job market according to the 21st century, to the new era of an industrial age that demands and seeks a new educational environment with new approaches, opportunities, and outcomes. At the same time, students who are able to access research-related resources will be more competitive in the labor market. Graduates with a lack of the job market requirements or corresponding work experience are unlikely to be considered with expectations of employment status [Manuel Salas-Velasco, 2021]. For universities, their relationship with the labor market is an important aspect, but the excessive number of graduates and modern job market requirements are serious reasons for the high unemployment rate among graduates.

What are the aspects of graduates' professional skills creation through the teaching of research and research in practice by disciplines of specialism?

The modern labor market changes systematically in the labor supply and demand, the requirements of labor markets, and the expectations of the developed skills of individual graduates. Today, unemployment is a significant problem to find a job as the requirements of the job market have increased due to the fast development of ICT [Provost F., Fawcett T, 2013]. The relationship between higher educational institutions (HEIs) and the labor market is an important aspect, but the excessive number of graduates does not satisfy the high requirements of the modern market. It means that HEIs have to stay competitive for effective and the needed knowledge creation with the needed requirement components of the job market [Mekvabidze R., 2020]. But, on the other hand, research requires conceptual understanding and it must be directed to discover and obtain new approaches with new results for innovation [Mekvabidze R., 2017]. However, academics' and employers' approaches to the relationship between HEI and job market requirements may be deemed inadequate

[Brown p., Lauder H., Ashton D., 2011]. The "Research in Higher Education"[1] is considering the situation of graduate employability with lifelong learning but such an approach is longer and Higher Education is unable to form graduates' skills for the job market. The effect of research on the chosen field of study on finding employment for university graduates and testing the ability of graduates have been examined to meet the expectations of job positions by three universities in Brno [Stojanová H., Blaková V., 2014]. HEIs have to be able to motivate students by encouraging them to be future-orientated by encouraging students to study research to achieve their future career options [DonnelyM., GamsuS., 2019].

Current thinking about the learning environment of the 21st century is based on involving the research teaching elements more intensively and integrating them into the educational process that has to master both basic and applied skills and focus them on the job market requirements. In my opinion, the transformation of education revealed some flaws, primarily in two directions: curricula and syllabi design, which lack merged research components through ICT [Mekvabidze R., 2018]. We need answers to the question: how is it possible to develop and integrate research competencies into knowledge creation through higher education in accordance with labor market requirements that have become more competitive after the crisis with COVID-19, also. It is impossible to assess the efficiency with which the education system considers graduates as job seekers. The efficiency of graduates in meeting the competitive workforce demands, taking into account the facts that are a reality with knowledge creation flows within graduates and the job market improvement of the educational components of research by study subject area (Mekvabidze R.,2016). Furthermore, this problem cannot be considered without the content of research and research in practice teaching in HEIs, the influence of research components by subject area on graduates as job seekers, and the question of how it will be done.

An analysis of the research knowledge by the subject area on the chosen field of study on finding employment for university graduates is interesting but at the same time, we have to identify a range of new technologies with their applications to the labor market with its transformation process [Mekvabidze R., Smiatenski R., Karchevski L., 2019]. The necessity of reforms in higher education considers technological innovation for research and increases the expected professional level of university graduates because Unified Information Space (UIS) is a tool for engaging students in critical thinking and problem-solving process in the labor market and increases the demands for labor workforce [Besson, J.,2015] and The next step of technological impact on the labor market is concerned with the introduction of AI which has led to a new form of „surveillance capitalism" [Zuboff, 2019]. This fact is a significant for high-skilled labor [Autor, Dorn, et al, 2017; Song, Price, et al., 2018] and this approach helps graduates in job by specislism to explain some of the changes that

[1] Interview with EERA Network 22 „Research in Higher Education", accessed: https://www.youtube.com/watch?v= A4623TRYWgI, retrieved 28.04.2022

include the low productivity in the workforce [Lauder et al.,2019]. Some of the EU countries show high graduate unemployment rates, but in Germany, adults with upper secondary education have better employment prospects than the employment rate of tertiary-educated adults.

1. FROM THE LABOR MARKET TO HIGHER EDUCATION

Universities are trying to change the education process according to the labor market and consider this relationship more closely. The discussion under Nicolescu L., Paun C. [2009] considered a relationship between higher education services and expectations of students at graduation with employers' requirements. Among these requirements, a central one is about what the labor market wants. In this case, a question may be formulated as are: What is the relationship between research indicators studying and practice, or how graduates can be engaged in the study program that considers graduates' employment problem-solving? [Mekvabidze R., 2020]. The US education system is seriously thinking about their offer and seeing problems. In this case, a question may be formulated as are: How can be realized the relationship between research indicators studying and practice, or how graduates can be engaged in a study program that considers graduates' employment problem-solving?

2. PROBLEMS & STATEMENT

From a realistic point of view, in the frame of the modern educational reforms, important changes have to provide the knowledge formation process and how to develop the integration of knowledge, competencies, and employment skills. As the main components of education - Teaching -Learning - research -Research in Practice - have to be considered in the context of an integration process of developing new knowledge that might be realized by considering the statements below according to the coordination between Higher Education and the job market requirements:

- An analysis of the knowledge formation and its direction to the right track to the requirements of the competitive job market;
- Student's outcome with its skills as needed attributes for student's carrier in prospect.

Based on this, statements of the problem are acceptable to consider as follows:

1. The weak link between higher education and the modern job market requirements in the fast development of ICT has to be more flexible and demandable for the transformation of education;
2. Higher Education Institutions offer students academic programs and pay less attention to the inclusion of the "Research and Research in Practice" components by subject area disciplines and the demands of the competitive job market.

3. RESEARCH FRAMEWORK

Education Institutions (EIs) face a more interconnected world, in which knowledge, creativity, research, and innovation are the essential elements of society's development that have to need upgraded systematically and developed processes in time as this process -knowledge creation and individual's professional skills - are considered to be the most important sources. Today, it is necessary to use various approaches for students' knowledge creation and professional skills -improvement by subject area of specialism to respond to the competitive job market in prospect. By this approach, the transformation of educational reform has to provide students with active engagement not only in the teaching-learning process, but it has to provide students' creativity and practical skills of research and research in practice knowledge that are the main requirements of competitive job markets. Normally, universities are trying to make educational programs more flexible but it is a fact, that the educational process requires changes in the conditions of fast development of information technologies for which the indicators required by the competitive labor market should be analyzed and their implementation in the learning process. In the frame of the research we want to draw:

- The visions of academics, graduates, and MA students and what components they need to realize to be a prospective participants in the competitive job markets;
- The approaches of academics, graduates, and MA students how maybe transform the study program by subject area of specialism for research and research in practice skills development and what indicators can be considered for achieving the modern and competitive job market demands.

3.1. RESEARCH OBJECTIVE

We consider, analyze and discuss the relationship between the structure of education and the requirements of the labor market in accordance with their relationship with the components of "Research and Research in Practice" through the main subject area of the countries -Poland and Georgia. instead of three aspects, our approach focuses on four aspects of the sustainability of the education system (Teaching- Learning- Research-Research in Practice) to create knowledge with their practical usage by future graduates as seekers for the job market. *The main attention is paid to the problem of usage of „Research and Research in Practice" by studying the subjects area. The main objective is to reveal the interrelationship between „Research and Research in Practice" teaching with respect to the modern job market requirements as the main factor for the development of the critical and logical skills, and creativity analysis that is needed for the workplace.*

3.2.THE AIMS OF RESEARCH

The research aims are to explore the graduates' success in the labor market after finishing their chosen field of study and how the teaching of „Research and Research

in Practice“ will influence their success as job seekers. In this frame we are considering:

1. Integration possibilities of students in „Research and Research in Practice“ to develop the student's logical and critical thinking in accordance with the requirements of the competitive job market;

2. Comparative analysis of the respondents – academics, graduates, and MA students of Georgia and Poland in the context of the formation of graduates' critical thinking, creative analysis, and practical vision that helps to address socio-economic challenges by the competitive market requirements that can drive the employment and poverty reduction and social development, because the real challenges remain and some are becoming more acute. 3. Analysis of the potential of HEIs as a major issue within the relationship between Higher Education Institutions and the competitive job market requirements.

The realization of the aims is considered:

1. Preparing the practical statements/indicators as the variables for analysis by the questionnaires for academics, graduates, and MA students according to employment skills development by field of study that attempt to answer the questions:

- What are the aspects of knowledge and practical skills creation for the competitive market requirements?
- Is the Modern Education System towards knowledge and job practical skills creation?
- Is the student motivated for knowledge and the job practical skills creation in the frame of new adaption of subject study and how it will be done?

2. Can the job market indicators in a broad sense be considered as the elements of knowledge and practical skills and their relationship as a new model?

3.3. RESEARCH METHODOLOGY

The research methodology that matches the realization of the objectives considers the activities as follows:

1. Preparing the questionnaires with the statements/indicators for three categories of respondents: academics, graduates, and MA students;

2. The questionnaires with the variables (the statements/indicators) for academics “varQ1”, for graduates “varQ2”, and for MA students “varQ3” of the Public Universities of Georgia and Poland Universities were speeded through the internet from April 2021 to July 2022

3. The surveys from academics “varQ1”, graduates “varQ2”, and MA students “varQ3” of the Universities of Georgia and Poland were collected from April 2021 to July 2022.

4. Data processing was provided for analysis and revealing the approaches of academics, graduates, and MA students accordingly to the introduction for teaching „Research and Research in Practice“ by studying subjects area that is the active

instruments for developing the needed skills (creativity, analyzing, thinking) of employability for the competitive job market requirements. Program software STATA was used for data processing.

4. An assessment of the reliability of the questionnaire statements/indicators that are measured using Cronbach's alpha.

5. Likert scale is used with 5 parameters (Strongly agree (SA), Agree (A), Neutral (N (Do not know)), Disagree (DA), Strongly Disagree (SD)).

6. The questionnaire survey was carried out as an online questionnaire. The total amount of respondents is 1784. By the category, the respondents are as follows: 341 academics, 768 graduates, and 675 MA students.

3.3.1. Questionnaire for academics "varQ1", graduates "varQ2", and MA students "varQ3" by the statements/indicators

Questionnaire for acade

varQ1-1. The teaching of the research and model-building knowledge may be considered as a basis of the research in practice for the students

varQ1-2. Research for Model-building teaching is effective for student outcome

varQ1-3. Implementation of research teaching by the disciplines helps a student to increase critical thinking

varQ1-4. An effective strategy for knowledge formation is the teaching of model-building for research in practice

varQ1-5. Practical skills of Research would be achieved by involving research in the teaching

varQ1-6. To be the job seekers in prospect, all students and all graduates need to accumulate research and research in practice as a reaction to the job market requirements

varQ1-7. Quality research teaching improves students' competitiveness for the job market

varQ1-8. ICT helps the student to promote practical thinking and professional skill

varQ1-9. Becoming a creative thinker is understanding your practical potential within the learning outcome and the job market

varQ1-10. The link between Higher Education and the labor market is considered as global according to labor market requirements.

Questionnaire for graduates "varQ2"

varQ2-1. The teaching of the research and model-building knowledge may be considered as a basis of the research in practice for the students

varQ2-2. Research for Model-building teaching is effective for student outcome

varQ2-3. Implementation of research teaching by the disciplines helps a student to increase critical thinking

varQ2-4. An effective strategy for knowledge formation is the teaching of model-building for research in practice
varQ2-5. Practical skills of Research would be achieved by involving research in the teaching
varQ2-6. To be the job seekers in prospect, all students and all graduates need to accumulate research and research in practice as a reaction to the job market requirements
varQ2-7. Quality research teaching improves students' competitiveness for the job market
varQ2-8. ICT helps the student to promote practical thinking and professional skill
varQ2-9. Becoming a creative thinker is understanding your practical potential within the learning outcome and the job market
varQ2-10. The link between Higher Education and the labor market is considered as global according to labor market requirements.

Questionnaire for MA students "varQ3"
varQ3-1. Student needs higher qualifications and skills to obtain a job within a competitive job market
varQ3-2. All academics have to be good researchers
varQ3-3. The demand for high-skilled work would be available who had the resources of a good education with research and research in practice
varQ3-4. Today, in the frame of the developing technology, employers consider a graduate degree as their possibility of possession of research skills
varQ3-5. Obtain research practice in the teaching process is a knowledge transfer for the job market
varQ3-6. Research and research in practice interact with the teaching of modeling, optimization, and job market requirements
varQ3-7. Research skills development has to begin from the bachelor's level
varQ3-8. Quality teaching of research is a benefit for students and graduates in the job market
varQ3-9. Research in practice is a basis for graduates to be the perspective participants for (in) competitive job markets
The questionnaires with statements/indicators/ of the survey were spread through the internet to academic staff, graduates, and MA students of Public Universities of Georgia and Public Universities of Poland with the aim to show their vision and challenges, and to make the possible replacements of these indicators in the frame of the modern educational situation.

3.4. RELIABILITY ANALYSIS

The reliability of statements/ indicators/ items in sections of the questionnaire was measured by how closely related a set of statements/ indicators/ items are as a group by the internal consistency using Cranach's alpha which is considered to be

a measure of scale reliability. The variables with their statements/indicators as the questionnaires and results of Cranach's alpha are given in Table 1.

Table1. Reliability analysis

Name of variables	Variable	Number of the Statements/ indicators	Cronbach's alpha
Q1	Academics' vision on the interrelation of the graduate's education degree by subject area according to the job market requirements	10	0.8657
Q2	Graduates' vision on the interrelation of their education degree by subject area according to the job market requirements	10	0.8657
Q3	MA students' vision on the interrelation of their education degree by subject area according to the job market requirements in prospect	9	0.7643

3.5 DEMOGRAPHY INFORMATION ABOUT RESPONDENTS

The demographic information about respondents (academics, graduates, and MA students) is given in Tables 2-4.

Table 2. Demography information of academics

Category	Classification	Frequency	%
Status	Professor	41	12
	Associate professor	76	22.29
	Assistant professor	121	35.49
	Teacher	71	20.83
	Invited teacher	32	9.39
Subject area	Economics	93	27.27
	Management	88	25.80
	Business	75	21.99
	ICT/IT	56	16.43
	History	5	1.47
	Finance	24	7.04
Teaching experience, year	Under 5	81	23.75
	5-10	121	35.48
	10-15	68	19.94
	15-20	52	15.25
	Above 20	19	5.58

Table 3. Demography information of graduates

Category	Classification	Frequency	%
Status	Employed by specialism Years of Graduation Work Experience	320 1-8 3-5	41.67
	Unemployed Years of graduation	448 1-4	58.33
Subject area	Economics	140	18.23
	Management	155	20.18
	Business	159	20.70
	ICT	176	22.92
	History	42	5.47
	Finance	96	12.50
Job seeker, Year for specialism	Under 6 months	41	12.81
	Under 1	108	33.75
	1-2	101	31.56
	Above 2	70	21.87

Table 4. Demography information of MA students

Category	Classification	Frequency	%
Status	I course year	247	36.60
	II course year	328	48.59
Subject area	Economics	112	16.59
	Management	101	14.96
	Business Administration	105	15.56
	IT	145	21.48
	History	50	7.41
	Tourism	87	12.89
	Finance	75	11.11

4. THE RESULTS OF DATA PROCESSING

The data processing of respondents that is around the main variable "The relationship of Research, Research in Practice, and the competitive job market requirements" are grouped accordingly to the vision of respondents' categories, as are: Academics' vision to graduates knowledge to the job market requirements; graduates vision to their knowledge to the job market requirements as job seekers; MA students vision

to their knowledge to the job market requirements in prospect. From these interactions, we will try to reveal a general regularity and necessity of transformation of the triangle (teaching-learning-research) into the teaching-learning-research-research in practice and accordingly transformation of research teaching by subject area disciplines. We estimate a mean of results by all five components of the Likert Scale. In the tables we estimate a mean of results by the positive answers of the respondents.

Table 5. Academics' vision: Interrelation of the graduate's knowledge of 'Research and Research in Practice' by subject area according to the competitive job market requirements

Name of the variable	Indicators/Items	Frequency				
		SA	A	N	DA	SD
Research, Research in practice, and the competitive job market requirements.	The teaching of the research and model-building knowledge may be considered as a basis of the research in practice for the students	125	149	38	15	14
	Research for Model-building teaching is effective for student outcome	95	157	44	29	16
	Implementation of research teaching by the disciplines helps a student to increase critical thinking	79	170	38	44	10
	An effective strategy for knowledge formation is the teaching of model-building for research in practice	131	141	40	18	11
	Practical skills of Research would be achieved by involving research in the teaching	191	95	31	17	7
	To be job seekers in prospect, all students and all graduates need to accumulate research and research in practice as a reaction to the job market requirements	163	129	21	22	6
	Quality research teaching improves students' competitiveness for the job market	201	97	31	8	4
	ICT helps the student to promote practical thinking and professional skill	138	126	34	31	12
	Becoming a creative thinker is understanding your practical potential within the learning outcome and the job market	140	95	45	38	23
	The link between Higher Education and the labor market is considered as global according to the labor market requirements	140	95	45	38	23

Table 5.1. An estimation of the academics' vision of the statements/indicators by the Likert scale

Name of the variable	Mean	Std. Err	[95% Conf. Interval]
Q1-1	68.2	28.66601	-11.3896 147.7896
Q1-2	68.2	25.93338	-3.80259 140.2026
Q1-3	68.2	27.71714	-8.755125 145.1551
Q1-4	68.2	28.13432	-9.913397 146.3134
Q1-5	68.2	34.31385	-27.07051 163.4705
Q1-6	68.2	32.3379	-21.58441 157.9844
Q1-7	68.2	37.14485	-34.9306 171.3306
Q1-8	68.2	26.38636	-5.06028 141.4603
Q1-9	68.2	29.70421	-14.2721 150.6721
Q1-10	68.2	21.64116	8.11449 128.2855

Table 6. Academics' vision: Interrelation of the graduate's knowledge of 'Research and Research in practice' by subject area according to the job market requirements by the positive answers

Name of the variable	Indicators/Items	Frequency (SA+A)	%
Research, Research in practice, and the competitive market requirements.	The teaching of the research and model-building knowledge may be considered as a basis of the research in practice for the students	274	80.35
	Research for Model-building teaching is effective for student outcome	252	73.90
	Implementation of research teaching by the disciplines helps a student to increase critical thinking	249	73.02
	An effective strategy for knowledge formation is the teaching of model-building for research in practice	272	79.77
	Practical skills of Research would be achieved by involving research in the teaching	286	83.87
	To be job seekers in prospect, all students and all graduates need to accumulate research and research in practice as a reaction to the job market requirements	292	85.63
	Quality research teaching improves students' competitiveness for the job market	298	87.39
	ICT helps the student to promote practical thinking and professional skill	264	77.42
	Becoming a creative thinker is understanding your practical potential within the learning outcome and the job market	235	68.91
	The link between Higher Education and the labor market is considered as global according to the labor market requirements	235	68.91

Table 6.1. A mean estimation of the academics' vision by the positive answers

Positive answers	Mean	Std. Err.	[95% Conf. Interval]
Frequency	265.7	7.157048	249.5096 - 281.8904
%	77.50	2.069716	72.81598 - 82.18002

Comment. Comparing tables 5.1 and 6.1 shows that academics by their positive answers 77.50% supported considering the integration of „Research and Research in Practice" in the teaching process accordingly to the modern job requirements.

Table7. Graduates' vision: Interrelation of the graduate's knowledge of 'Research and Research in Practice' by subject area according to the competitive job market requirements

Name of the variable	Indicators/Items	Frequency				
		SA	A	N	DA	SD
Research, Research in practice, and the competitive market requirements.	The teaching of the research and model-building knowledge may be considered as a basis of the research in practice for the students	270	390	75	21	12
	Research for Model-building teaching is effective for student outcome	272	359	101	26	10
	Implementation of research teaching by the disciplines helps a student to increase critical thinking	320	390	43	7	8
	An effective strategy for knowledge formation is the teaching of model-building for research in practice	288	399	50	22	9
	Practical skills of Research would be achieved by involving research in the teaching	331	345	65	22	5
	To be the job seekers in prospect, all students and all graduates need to accumulate research and research in practice as a reaction to the job market requirements	303	370	79	9	7
	Quality research teaching improves students' competitiveness for the job market	399	279	81	9	0
	ICT helps the student to promote practical thinking and professional skill	341	295	99	19	14
	Becoming a creative thinker is understanding your practical potential within the learning outcome and the job market	324	295	108	12	9
	The link between Higher Education and the labor market is considered as global according to the labor market requirements	395	341	21	7	4

Table 7.1. A mean estimation of the academics' vision by the Likert Scale

Name of the variable	Mean	Std. Err	[95% Conf. Interval]	
Q2-1	153.6	75.24799	-55.32191	362.5219
Q2-2	153.6	69.23771	-38.63469	345.8347
Q2-3	153.6	70.11819	-60.07929	329.2793
Q2-4	153.6	78.02218	-57.02429	376.2243
Q2-5	153.6	75.38674	-53.70713	364.9071
Q2-6	153.6	76.06024	-55.57708	366.7771

Q2-7	153.6	79.28405	-66.52783	73.7278
Q2-8	153.6	69.17341	-38.45616	345.6562
Q2-9	153.6	67.81932	-38.69662	337.8966
Q2-10	153.6	87.99068	-90.70133	97.9013

Table 8. Graduates' vision: Interrelation of the graduate's knowledge of 'Research and Research in practice' by subject area according to the job market requirements by the positive answers

Name of the variable	Indicators/Items	Frequency (SA+A)	%
Research, Research in practice, and the competitive job market requirements.	The teaching of the research and model-building knowledge may be considered as a basis of the research in practice for the students	660	85.94
	Research for Model-building teaching is effective for student outcome	631	82.16
	Implementation of research teaching by the disciplines helps a student to increase critical thinking	710	92.45
	An effective strategy for knowledge formation is the teaching of model-building for research in practice	687	89.45
	Practical skills of Research would be achieved by involving research in the teaching	676	88.02
	To be job seekers in prospect, all students and all graduates need to accumulate research and research in practice as a reaction to the job market requirements	673	87.63
	Quality research teaching improves students' competitiveness for the job market	678	88.28
	ICT helps the student to promote practical thinking and professional skill	536	69.76
	Becoming a creative thinker is understanding your practical potential within the learning outcome and the job market	619	80.60
	The link between Higher Education and the labor market is considered as global according to the labor market requirements	736	96.21

Table 8.1. A mean estimation of the academics' vision by the positive answers

Positive answers	Mean	Std. Err.	[95% Conf. Interval]	
Frequency	660.6	17.52725	620.9506	700.2494
%	86.05	2.302912	80.84045	91.25955

Comment. Comparing tables 7.1 and 8.1 shows that graduates by their positive answers 86.05% supported considering integration of „Research and Research in Practice" in the teaching process accordingly to the modern job requirements. But it is interesting to consider their answers according to each statement/indicator. It is interesting to compare the answers of academics and graduates on each indicator by

places that they take in the answers according to each statement/indicator. A result is given in Table 9 below.

Table 9. Assessment of the statements/indicators by the places that they take by academics and graduates answers

#	Statement/indicator	# of the place of the indicator by Academics	# of the place of the indicator by Graduates
1	The teaching of the research and model-building knowledge may be considered as a basis of the research in practice for the students	3	7
2	Research for Model-building teaching is effective for student outcome	**7**	**8**
3	Implementation of research teaching by the disciplines helps a student to increase critical thinking	8	2
4	An effective strategy for knowledge formation is the teaching of model-building for research in practice	**4**	**3**
5	Practical skills of Research would be achieved by involving research in the teaching	2	5
6	To be the job seekers in prospect, all students and all graduates need to accumulate research and research in practice as a reaction to the job market requirements	**6**	**6**
7	Quality research teaching improves students' competitiveness for the job market	1	4
8	ICT helps the student to promote practical thinking and professional skill	5	10
9	Becoming a creative thinker is understanding your practical potential within the learning outcome and the job market	9	9
10	The link between Higher Education and the labor market is considered as global according to the labor market requirements	10	1

As we see academics and graduates agree or are close to this situation according to indicators # 9,6,4,2. More interesting is their vision according to #10 and #5. In the case of #10 for graduates is very important from in realistic point of view, Higher Education has to be more flexible and have to work to the labor market requirements. From the vision of academics, this approach is not really as it is fact that changes in the educational system are not easy and it functions more under the academic style than practical. According to #8: graduates are right as it helps them to promote their skills but not create! In any case, both sides are interested that research, and research in practice develop needed professional skills that are a necessity for competitive job seekers.

Table 10. MA student's vision: Interrelation of the graduate's knowledge of 'Research and Research in Practice' by subject area according to the competitive job market requirements

Name of the variable	Statement/ Indicator/Item	Frequency and %				
		SA	A	N	DA	SD
Research, Research in practice, and the competitive job market requirements.	Student needs higher qualifications and skills to obtain a job within a competitive job market	370	296	9	0	0
	All academics have to be good researchers	401	265	9	0	0
	The demand for high-skilled work would be available who had the resources of a good education with research and research in practice	212	285	136	26	16
	Today, in the frame of the developing technology, employers consider a graduate degree as their possibility of possession of research skills	349	255	68	2	0
	Obtain research practice in the teaching process is a knowledge transfer for the job market	420	201	41	8	5
	Research and research in practice interact with the teaching of modeling, optimization, and job market requirements	375	296	4	0	0
	Research skills development has to begin from the bachelor's level	450	201	24	0	0
	Quality teaching of research is a benefit for students and graduates in the job market	390	254	28	2	1
	Research in practice is a basis for graduates to be the perspective participants for (in) competitive job markets	320	290	63	2	0

Table 9.1. A mean estimation of the MA students' vision

Name of the variable	Mean	Std. Err	[95% Conf. Interval]
Q3-1	135	73.79024	-89.87456 - 319.8746
Q3-2	135	79.76904	-98.47437 - 344.4744
Q3-3	135	52.18812	-9.897454 - 279.8975
Q3-4	135	70.82725	-61.64798 - 331.648
Q3-5	135	79.82669	-86.63442 - 356.6344
Q3-6	135	82.80459	-94.9024 - 364.9024
Q3-7	135	87.27886	-107.325 - 377.325
Q3-8	135	79.46068	-85.61822 - 355.6182
Q3-9	135	70.47978	-60.68325 - 330.683

Table 10-1. MA students' vision: Interrelation of the MA student's knowledge of 'Research and Research in practice' by subject area according to the job market requirements by the positive answers

Name of the variable	Indicators/Items	Frequency (SA+A)	%
Research, Research in practice, and the competitive job market requirements.	Student needs higher qualifications and skills to obtain a job within a competitive job market	666	98.67
	All academics have to be good researchers	666	98.67
	The demand for high-skilled work would be available who had the resources of a good education with research and research in practice	497	73.63
	Today, in the frame of the developing technology, employers consider a graduate degree as their possibility of possession of research skills	604	89.48
	Obtain research practice in the teaching process is a knowledge transfer for the job market	621	92.00
	Research and research in practice interact with the teaching of modeling, optimization, and job market requirements	671	99.41
	Research skills development has to begin from the bachelor's level	651	96.44
	Quality teaching of research is a benefit for students and graduates in the job market	644	95.41
	Research in practice is a basis for graduates to be the perspective participants for (in) competitive job markets	610	90.37

Table 10-2. A mean estimation of the students' vision by the positive answers

Positive answers	Mean	Std. Err.	[95% Conf. Interval]
Frequency	625.5556	18.09628	**583.8255 667.2856**
%	92.67556	2.68117	**86.49277 98.85835**

Comment. Comparing Tables 9.1 and 10.1 shows that MA students by their positive answers 92.67556 % supported considering integration of „Research and Research in Practice" in the teaching process accordingly to the modern job requirements. They have more careful approaches to their answers. They know, that graduates are face-to-face with the employer and their behavior is a lesson for them and they have to consider their steps in the experience as job seekers.

According to MA students' main vision by the positive answers on the Interrelation of "Research and Research in practice" by subject area according to the job market requirements (Table 10), they indicate that Research and Research in Practice interact with the teaching of modeling, optimization, and job market requirements and Research skills development has to begin from the bachelor level (assessments 671, 96.44%; 651, 99.41%), and to obtain research practice in the teaching process is a knowledge transfer for the job market (assessments 621, 92%)

CONCLUSION

Today, the main challenge of higher education reform is the weak linkage between related study programs and job market requirements. The lack of the needed skills of graduates dictates the improving relationship between these two components for better economic performance. Research is considered for the Universities of Poland and Georgia. The research seeks to foster „Research and Research in Practice“ in study programs that link the knowledge of practical research output to the job market's requirements which has to be the important components for the programs by the subject area. It is very important as graduates are face-to-face to employers. It means, that improving the relationship between HE and labor market requirements is necessary. The outcome of the research may be considered as one of the interesting possibilities for involving "Research and Research in Practice" for the teaching by the subject area of specialization from the bachelor to Ph.D. studying levels. The following outcomes of the research are recommended:

1. Working out the study course of "Research and Research in Practice" and its integration into the knowledge triangle for improving students' logical and practical skills and creativity;
2. Enhancement of sustainable ties between the universities and industry for more effective collaboration with potential employers and graduates for increasing graduates' competitiveness in the job market;
3. Generation of understanding between teachers and students for increasing student-centered teaching, on one hand, and between academics and employers for understanding the need requirements of the job markets, on the other hand.

Following the logic in prospect, it would be beneficial to analyze the effect of the HEIs in terms of a student's pathway through the course "Research and Research in Practice" which is the importance of the student's knowledge progress to the requirements of the labor market, in general. The first challenge facing the implementation of the course "Research and Research in Practice" at university is how much academic teaching staff really knows about the industry or about the subjects' area of specialism or interrelation between them. Another challenge, related to the first, is using a program software for tasks' solving. There is no doubt this course could improve student engagement with the content of industry examples, which will better prepare them to achieve learning outcomes, and that university teachers need new skills and a different perspective on course content more broadly.

REFERENCES

Autor, D., Dorn, D., Katz, L., Patterson, C., & Van Reenen, J. (2017). The fall of the labor share and the rise of superstar firms. (NBER Working Papers 23396). Cambridge: National Bureau of Economic Research, accessed: https://academic.oup.com/qje/article/ 135/2/-645/5721266/, retrieved 28.04.2022

Besson, J. (2015). Learning by doing. London: Yale University Press, pp. 54-61

Brown, P., Lauder, H., & Ashton, D. (2011). "The global auction: The broken promises of education, jobs, and income:". New York: Oxford University Press, pp. 83-98

Brown, P., Lauder, H., & Cheung, S. Y. (2020). The death of human capital? Its failed promise and how to renew it in an age of disruption. Oxford University Press (OUP), pp:104-120

Donnelly, M., & Gamsu, S. (2019). The field of graduate recruitment: Leading financial and consultancy firms and elite class formation. The British Journal of Sociology, 70, 1374–1401, https://researchportal.bath.ac.uk/en/publications/the-field-of-graduate-recruitment-leading-financial-and-consultan, retrieved 11.04.2022

Labor Markets and Skills. https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/european-semester/thematic-factsheets/labour-markets-and-skills_en, retrieved 23.04.2022

Manuel Salas-Velasco (2021). Mapping the (mis)match of university degrees in the graduate labor market. Journal for Labor Market Research. Volume 55 (1), DOI: 10.1186/s12651-021-00297-x, accessed: https://www.researchgate.net/journal/Journal-for-Labour-Market-Research-2510-5019, retrieved 22.04.2022

Mayhew, K., & Holmes, C., (2012). The changing shape of the UK job market and its implications for the bottom half of earners. London: The Resolution Foundation, accessed: https://www.resolutionfoundation.org/app/uploads/2014/08/The-Changing-Shape-of-the-UK-Job-Market.pdf, retrieved 22.04.2022

Measuring the Impacts of Federal Investments in Research. A Workshop Summary. Impact of Research on the Labor Market and carrier Development, pp: 49-51, https://www.ncbi. nlm. nih.gov/books/NBK83131/pdf/Bookshelf_NBK83131.pdf, retrieved 02.04.2022

Mekvabidze R. (2016). The knowledge triangle as a main educational aspect of learning outcome. Scientific Papers of Berdyansk State Pedagogical University. Series: Berdyansk, Pedagogical sciences, Issue 2, pp:126-132.

Mekvabidze R. (2018). Following Educational Reforms: Issues and Problems of Transformation of Higher Education (A case of Georgia). International Conference, Gori State Teaching University, Collection of Scientific Works, Volume 12, pp:124-135

Mekvabidze R. (2017). Following Educational Reforms: Framework of Knowledge Creation. Research Through Student-Centered Teaching at the University. International Conference of EDEN: Open Schools for Open Societies, 2017, 20-22/10/2017, in ATHENS http://openschool2017.ea.gr/?q=Program

Mekvabidze R..Leszek Karczewski, Roman Śmietański (2019). The Fourth Industrial Age and its impact on decision making optimization through knowledge creation accordingly of competitive market requirements. The 12th International Scientific Conference, Gori State Teaching University, 2019, 15-16 November. Volume III, N 2, 83-89, 2021

Mekvabidze R. (2020).From Business Modeling to Business Management: An Exploratory Study of the Optimal Decision Making on the Modern University Level. ISSN 2409-2665 Journal of Logistics, Informatics and Service Science Volume 7, No1,pp:67-86. DOI:10.33168/LISS.2020.0106.

McGuiness s., Konstatinos P., Redmond P.(2018). Skills Mismatch: Concepts, Measurement, and Policy Approaches, accessed: https://Online library.willey.com/ doi/abs/101111/joes.12254, retrieved 13.05.2022

Nicolescu L., Paun C. (2009).Relating Higher Education with the Labour Market: Graduates' expectations and employers' requirements. Journal Tertiary Education and Management. Vol.15, No. 1, pp:17–33, https://doi.org/10.1080/ 1358388080 2700024, retrieved 13.05.2022

Song, J., Price, D., Guvenen, F., Bloom, N., & von Wachter, T. (2018, April). Firming up inequality. Working Paper Series. Working Paper, No: 21299, NBER, Cambridge, https://www.nber.org/system/files/working_papers/w21199/revisions/w21199.rev0.pdf, retrieved 08.06.2022

Hugh Lauder, Ken Mayhew (2020). Higher Education and the labor market: an introduction. Oxford review of Education, volume 46,2020,pp:1-9, https://www.tandfonline.com/doi/ full /10.1080/03054985.2019.1699714, retrieved 22.03.2022

Zuboff, S. (2019). Surveillance Capitalism and the Challenge of Collective Action. New Labor Forum. Murphy Institute, City University of New York DOI: 10.1177/1095796018819461, https://journals.sagepub.com/doi/full/10.1177/1095796018819461,retrieved 22.03.2022

Provost, F., and Fawcett Tom. (2013). Data Science and Its Relationship to Big Data and Data-Driven Decision Making. DOI: 10.1089/big.2013.1508, https://www.liebertpub. com/doi/10.1089/big.2013.1508, retrieved 10.08.2022

Stoianova H., Blaskova V. (2014). The Role of Graduates' Field of Study and Its impact on the Transition to Working Life. 17th International Conference Enterprise and Competitive Environment 2014. Procedia Economics and Finance, volume 12, 2014, 636-643, https://www.sciencedirect.com/science/article/pii/S2212567114003888?via%3Dihub, retrieved 23.03.2022