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КРИЗИСНОЕ УПРАВЛЕНИЕ И ТЕХНОЛОГИИ

СБОРНИК НАУЧНЫХ И НАУЧНО-МЕТОДИЧЕСКИХ

СТАТЕЙ

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Երաշխավորված է տպագրության Հայաստանի Հանրապետության արտակարգ իրավիճակների նախարարության Ճգնաժամային կառավարման պետական ակադեմիայի գիտական խորհրդի կողմից

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ГОСУДАРСТВЕННАЯ АКАДЕМИЯ КРИЗИСНОГО УПРАВЛЕНИЯ
КРИЗИСНОЕ УПРАВЛЕНИЕ И ТЕХНОЛОГИИ

РЕДАКЦИОННЫЙ СОВЕТ

R. V. Topchyan, V. A. Gyulazyan, E. H. Karagulyan, H. V. Daveyan

BRINGING EMPLOYER CONTEXT TO EDUCATION: EMPLOYER ENGAGEMENT FRAMEWORK

Employer engagement is an area of increasing importance for the strategic development of Higher Education Institutions (HEIs). However, one of the major concerns of employers is the students' lack of knowledge of the workplace.
Employers expect 'career-ready' graduates. At the same time, the graduates expect that HEIs provide elements of work-related education. Today, the communication between employers and these educational institutions still do not lead to the expected results of both employers and students. In this regard, providing a proper framework for a dialogue that is understandable for both parties is one of the main challenges. An important issue is how employer needs are translated into curricula, ensuring the required progress of future workforce throughout the whole learning process. "Contextual assessment" as the main tool for transferring employer context into education environment will be discussed. Thus, this article addresses the significance of developing a framework for a better dialogue between employers and higher education institutions with the aim to improve the assessment of students and to ensure the necessary progress and the achievement of expected learning outcomes.

Keywords: *employer engagement, competency-based learning, employer communication, assessment of students, contextual assessment.*

Introduction

Throughout the last 20 years, the Armenian Higher Education System has been encountering a number of reforms aimed at its enhancement and increase of effectiveness. Within these processes, creating and sustaining a strong link with the employers is of critical importance.

Employers require skilled workforce in order to remain competitive. Likewise, HEIs want employers to provide a workplace environment where cross-cutting knowledge, skills, and abilities within a competitive industry can be learnt and developed. The results of satisfaction surveys from employers and students suggest that education provided by the HEI is not practical and in most cases, graduates gain their practical competences from the workplace. Therefore, the career development of graduates remains in the domain of employers.

There has also been a noticeable growth of interest in the interactions between HEIs and employers with the institutionalization of the quality assurance system in Armenia. Institutional evaluations of HEIs reveal the gaps in employer engagement within the curriculum design. Currently, the communication with employers takes place mostly on the level of executives and has often a formal approach. Generally, the dialogue with employers is predominately providing feedback to the curricula in general, for example, a list of subjects rather than the engagement of conversations that addresses teaching/learning and the core processes of students' assessment practices.

Hence, there is a considerable need for better dialogue between HEIs and employers in relation to the requirements of educational programs. It is important that this communication is taken in a frame useful for the alignment of teaching and learning.

Therefore, we believe that the alignment of internal activities with external requirements should be carried out through communication in a special framework. This framework should be understandable from both the employer and teacher's perspectives. It is our belief that assessment is the core process of learning; hence, we argue that employers are the ones to provide the context of that assessment. To make the dialogue most efficient, we have developed a certain methodology that allows designing the framework that is easy to use in addition to being an effective tool for HEIs. The presented methodology and framework was piloted with all interested stakeholders (employers). This framework used to structure the interviews with all participants - employers, students, teachers and graduates and proved to be a useful tool in investigating the development of work context/related assessment methods in higher education.

The results of interviews conducted with Information Technology sector employers, the developed framework and recommendations for holding the dialogue with employers are presented.

Workforce skills gap: dialogue with employers

Recently, there has been a number of reports highlighting gaps in labour market skills around the world, and high levels of youth unemployment. Most of the report findings are relevant for the context of employment within Armenia. Indeed, these issues were addressed within the content of the Institutional Reviews in Armenian HEIs.

It was revealed that currently, employers are not seeking employees who possess only knowledge, but are requiring them to have the desired skill set for the workplace. Therefore, employers strive to hire competent professionals who not only have the required knowledge but also have practical skills that enable them to take responsibility to perform complex tasks. Nonetheless, the employers emphasize that the professional behavior of students should be formed in the university. Thus, in an attempt to close the skills gap and improve employment rates, Armenia like many countries, has turned to its education system. Consequently, this has opened the door to new thinking and new developments with respect to creating links between employers and HEIs [1].

The dialogue between education and employers should be performed in the language that describes the workplace behavior. Thus, the education components such as teaching and learning as well as assessment of students, internships in the universities should be adapted to the workplace context and the employer engagement should be carried out around these components.

We believe that the absence of practice within education can be directly addressed by the assessment of students. The HEIs have not yet fully realized the urge for change, particularly in the assessment of students. The signal for the change can come from employers. Teaching and learning strategies should include practical components. These are important for the future workforce. A practical approach also generates motivation within the students, as they may feel that without the practical approach, their performance at work will be of low quality.

For that reason, our research is concentrated on the influence of the employer context within the assessment of students learning processes. [2]

Methods of employer engagement

There is a variety of means to engage employers within the educational system in order to integrate and enhance practice-based education. Employer experiences can be used in two ways for the development of teaching components: that is, direct and indirect. During the design of programs, direct information can be used by the university without initiating large changes whereas indirect information should be reshaped and find its place as education process components stressing some specifics in general activities.

If the employer is personally involved in educational systems e.g. teaching in the lecture room, or mentoring, they can directly demonstrate what instructional methods and assessment are proper for their work context. This would consider issues such as what methods of production and maintenance are used in practice, what kind of knowledge is useful in certain environment. Indeed, in the case of internships, the change of the student's behavior with internal adaptation of knowledge and skills takes place, at the same time the students receive feedback from the point of view of specific context from the certain employer. [3]

Employers who are not personally involved, can still become involved in the design of programs. In that they can provide information on industrial trends and the skills needed for targeted occupations and can help workforce organizations to identify and map career pathways [4]. Employers can also provide feedback on program content, including reviewing and commenting on curricula, or give input on program components, such as entrance requirements and selection processes, the program's structure and length, the textbooks and materials or assessments used.

Employers also provide services to students that may help to deliver various components of the training, such as talking to a class about what it is like to work in the field, teaching a component of a course, providing feedback to students in mock interviews, and mentoring program participants. By engaging in these ways, employers transmit information to students about the targeted sectors. Employers also help students build both hard skills and soft skills. Through their indirect interactions, employers can also build credibility for the program with students and help them access professional networks [5].

Moving beyond simple engagement, some employers have developed strong and effective partnerships with HEIs. Employers who are less engaged and provide one off feedback on curricula are not likely to participate fully in the program design, including feedback at multiple points and on multiple aspects. Similarly, employers who are moderately engaged within the program, including its delivery could offer internship opportunities to one or two students. Consequently, an employer who is fully engaged could offer

apprenticeship programs. Apprenticeship programs demand that employers play a role in designing the learning opportunities for broader groups of workers and actually paying the participants a salary while they learn. Much of the literature on employer engagement focuses on building intensive relationships, where employers are involved in programs in multiple ways [6].

Closing the skills gap: teaching environment adjustment

The main task of education is to effectively shape the teaching environment in order to produce the required skills for the development of the labor market. In this regard, the role of the teacher is of crucial importance. Involving teachers in the discussions with employers helps excavate the skills required from students. As the teachers are responsible for the quality and relevance of the education provided, they should be in the center of employer engagement in an attempt to transform employers' requirements to their daily work and reduce the disparity between what the students learn in the classroom and in the workplace.

In this respect, it is necessary that teachers are focused on students teaching/learning and assessment methods. This means that regardless of the requirements and characteristics of the educational program, the assignments and assessment of students should be oriented to the context of the workplace [7].

Consequently, the students should be taught generic skills for lifelong learning in addition to specific skills for the field of employment; this has to include professional knowledge and skills, which is the major component of education. For this particular reason, the progress of students should be visible. As an example, in the first year, the students can gain theoretical knowledge and year-by-year they should develop practical skills through solving classical problems and then passing to more complex ones. On each stage of educational progress, the growth in the professional field should be reflected. The students should start from getting the basic knowledge, then acquiring the skills from practical assignments with elements of autonomy, the next step should be making autonomous decisions using the skills for the specific case, the last but not least is solving more complex tasks not familiar for them. All these should be in the workplace context, therefore, not very abstract.

That is why employer context should be modeled in a university by the teachers taking into account the planned progress of students with growing autonomy and independence of decisions [8].

Framework for employer engagement

Employer engagement is multidimensional and the regular contact beneficial for stakeholders requires a specific framework. Here we focus on the assessment of students as the most important component of learning outcome approach. The major aim of the developed framework is to help enhance assessment practices in the universities for supporting students to achieve the required skills appropriate for the employer context. Hence, the framework should be defined in terms that are closer to the employer environment.

For employers, the main motivation is their **product** [9] in its different stages of development. Therefore, the dialog first should influence assessment by investigating the context of the product. Next, the main aspect of production, the **life cycle of product** [10], should be taken into account during student assessment, modelling the phases of the lifecycle and ensuring outcomes are close to them.

Most specifically, the framework classifies the competencies by the following categories:

- Product
- Product lifecycle
- Professional thinking, skills, abilities
- Body of knowledge

Product is everything offered to the market to satisfy a need or requirement including physical goods, services, expertise, events, people, space, estate, organizations, information and ideas.

To distinguish between the competencies predominant to the phases of lifecycle, the following **product lifecycle** classification, consisting of four stages, has been used. These are:

Conceive is the phase in which the product idea is generated. It includes needs assessment, definition of the main functional features and the design of the product.

Design is the phase includes the final design of the product including preliminary testing.

Implement is the phase that includes the descriptions and the sequence of operational steps and commands. Marketing documents and sales strategy are also included in this stage.

Operate – in this phase, the product owner has to provide the necessary information about product use and recovery.

These cycles should be considered as guiding tools that allow classifying specific competencies assuring the integrity of the description and the link with the labour market developments.

Professional Thinking – defined as a specific approach to problems, gained through the study or working in the area.

Body of knowledge – is the content of the course offered by education or training providers.

Therefore, these components of the framework were discussed with employers to enhance assessment of students organizing it in the employer context.

Fieldwork methodology and results of employer engagement practice

Methodology

To make the dialogue most efficient the offered structure was piloted to communicate with different stakeholders. Stakeholders' selection covers the diversity in the IT sector. In total eight focus group discussions were conducted.

Discussions were conducted with key IT sector employers including:

- Union of IT employers (UITE) - the largest IT employers union (including eight member employers)
- Synopsys Armenia as global market company with international management
- Synergy and SFL as locally managed Company providing international services
- Armenian Software as Armenian company with local customers.

The first focus group discussion was organised by UITE). Eight CEOs from IT companies took part in the discussions. The companies differed both in terms of the size (number of employees) and in terms of their profiles (products offered).

The remainder of the interviews covered the different levels of staff, including: chief officers, team leaders, software engineers with three year experience and newly graduates. However, the main focus was on the middle level managerial staff (Chief Technical Officers, Chief Operational Officers), this was because they have experience in product development and as a result, have a high level of knowledge and understanding of the product in its context throughout its lifecycle. It is assumed that the senior staff have low familiarity with the real human resource activities in the company, and lack insight into the intricate workings of its workforce. Whilst junior staff may not be aware of the wider context within the industry [11]. The analysis of midterm results helped adjust the organization and structure of interviews.

The focus group discussions aimed to reveal:

1. What are the products offered by the employer and what are their specific requirements?
2. What are the skills, competencies, required by the labour market throughout the whole product lifecycle?
3. What is the professional thinking necessary to perform professional duties?
4. What is the required body of knowledge for the employer to perform his duties?

The results from the interviews provided valuable data which was reflected in the employer satisfaction survey results conducted after the interviews.

Findings

Findings suggested that the employer is most interested and is aware of their product, the product lifecycle, and the characteristics of their employees - including their values/thinking and communicating work-relevant skills most efficiently[1].

During the interviews the participants gave different classification of the IT products (e.g. products/solution/services, programs/services, web/cloud/mobile systems, etc.). They emphasized the knowledge required of the subject area. Depending on the product demands (flexible, modifiable) the skill requirements to the employees could change. It was highlighted that the assessment practices should be defined covering the product specific for the market.

The participants listed the required qualities of the graduates necessary for each of the stages of the lifecycle and ensure the acquisition of these qualities they offered specific teaching and assessment practices applicable at their working context.

"There are cases when during the design of the product we use existing open-source tools…The students should be encouraged to use and adapt open-source projects".

[1] Currently the framework is also being applied to organize the dialogue with the labor market in the field of Translation Studies and Pedagogy and so far received positive feedback both from the employers and researcher's side.

"Testing of programs is necessary in all stages – the students have to understand its need and to value it. Testing can also be used as a tool for assessment".

The importance of knowledge of the product lifecycle among students was also stressed. It was suggested that this should be introduced early within the courses in an attempt to cultivate a specific mind-set/value system of the students. Specific activities, such as group projects would help students become acquainted with the product lifecycle.

Professional thinking was viewed as a crucial concept. The participants listed different types of thinking, system thinking (ability to deconstruct the system), and combinatory thinking as crucial among graduates.

"Verification of software is necessary in all years of education – the students have to understand its need and value it. Quality testing can also be used as criteria for assessment in computer science".

Hence, the data collected from participants within this frame can be used for developing curricula, performance standards, and assessment instruments that measure the acquisition of knowledge and skills.

"The assessment must be work- relevant and maybe even conducted by the employer".

The framework has also proven to be effective in relation to selecting the necessary body of knowledge and incorporating it in the curricula providing both post-graduation feedback as an alumni and employer's view.

The curricula contains courses on a programming languages/coding/testing, however they are very simple and never applied within workplace. Nevertheless big operations require completely different skills.

Conclusion

This framework proved to be effective by data gathered from interviews and the environment of mutual understanding during the focus group discussions. It also served as a resource for opening a dialogue between employers and HEIs, providing them with an opportunity to articulate their required workforce skill. This particular framework acts as a useful tool to assist curriculum design and development in relation to competency-based training; objectives and outcomes; tailor courses to specific student populations or industry needs, evaluate and update existing programme content.

In addition, it can also provide guidance to jobseekers of the skills required for successful careers in an industry. The data collected generated useful material for teaching staff. Data collected included, the context that is important for the model used during the assessment in teaching process and can help teachers keep relevance to future workplace environment. Teachers can transform workplace tasks into requirements of assessment making it very practical and helpful to understand its future context and relevance.

For employers, the findings of this research is also useful as it provides the orientation to market needs and helps understand how to overcome issues or possible obstacles when employing graduates. The framework also allows maintaining the same language not only in terms of definitions, but also set appropriate requirements.

Nevertheless, involving employers in the curriculum is not straightforward. It is necessary to make contact, identify suitable staff to work with employers and organize arrangements, and at the same time find the right employer that will devote the right amount of time and commitment. However, what is most essential is to identify the staff most relevant to get the right level of employer input.

It is also crucial that those who conduct the discussion are people that can sustain the common language as well as have a deep understanding of the quality assurance of education and enhancement in order to present the information in the right context. University staff with relevant employment experience as well as knowledge in quality assurance processes may be more relevant. From this particular research, indirect benefits include video recordings that were taken during the interviews give good practice for enhancing the communication and developments to understand the context of employer. The analysis showed that the process of interviewing was very helpful for teachers to have their own findings and using them to change the curricula. At the same time, it was very helpful to build their capacity of conducting interviews. The video materials of interviews are very valuable as training materials for universities to

further implement the framework. Moreover, reviewing these materials by university staff has an impact on their personal and professional development. For students those video materials give possibility to understand the context of future working environment. These talks influence professional motivation of students and help realize student-cantered approach elements and make more informed decisions when choosing a course during their studies.

Bibliography

1. **Cappelli, P.** (2012). Why good people can't get jobs: The skills gap and what companies can do about it. Philadelphia: Wharton Digital Press.
2. **Developing** Market-Relevant Curricula and Credentials: Employer Engagement for Community Colleges in Partnerships. (2012). Retrieved from http://skilledwork.org/wp-content/uploads/2015/01/EmployerEngagement.pdf
3. **Report** on Employer Engagement Emerging Practice from QAA Reviews (Rep.). (2014). Retrieved from http://www.qaa.ac.uk/en/Publications/Documents/Employer-Engagement-Report.pdf
4. **Gulikers, J., Biemans, H., Mulder, M.** (2009). Developer, teacher, student and employer evaluations of competence-based assessment quality
5. **Thematic** paper on Employer engagement in design and development of skills solutions (Rep.). (2013). Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/303151/thematic-paper-3-employer-engagement.pdf
6. **Spaulding, S., & Martin-Caughey, A.** (2015). The Goals and Dimensions of Employer Engagement in Workforce Development Programs (Rep.). Retrieved from http://www.urban.org/research/publication/goals-and-dimensions-employer-engagement-workforce-development-programs
7. **McClarty, K., & Gaertner, M.** (2015). Measuring Mastery Best Practices for Assessment in Competency-based Education (Working paper). Retrieved from https://www.luminafoundation.org/files/resources/measuring-mastery.pdf
8. **Irwin, P.** (2008). Competencies and Employer Engagement. Asia Pacific Education Review, 9 (1), 63-69.
9. IEEE. Retrieved October 01, 2016, from https://www.ieee.org/index.html
10. Worldwide CDIO Initiative. Retrieved October 01, 2016, from http://www.cdio.org/
11. **Report** on Engaging Employers to Enhance Teaching and Learning (Rep.). (2009). Retrieved from www.reading.ac.uk/ccms

17.10.2016.

Ռ. Վ. Թոփչյան, Վ. Ա. Գյուլազյան, Է. Հ. Կարագուլյան, Հ. Վ. Դավեյան

ԳՈՐԾԱՏՈՒՆԵՐԻ ՀԱՄԱՏԵՔՍՏԻ ՆԵՐԱՌՈՒՄԸ ԿՐԹՈՒԹՅՈՒՆ. ԳՈՐԾԱՏՈՒԻ ՆԵՐԳՐԱՎՄԱՆ ՇՐՋԱՆԱԿ

Գործատուների ներգրավումը Բարձրագույն ուսումնական հաստատությունների ռազմավարական զարգացման համար կարևոր ոլորտ է: Այնուամենայնիվ, գործատուների հիմնական մտահոգությունը ուսանողների գիտելիքի պակասն է աշխատավայրի վերաբերյալ: Գործատուները ակնկալում են աշխատանքին պատրաստ ուսանողներ: Միևնույն ժամանակ շրջանավարտներն ակնկալում են որ բուհը կապահովի աշխատավայրին մոտ գիտելիքներ: Այսօր, գործատուների և կրթական հաստատությունների միջև հաղորդակցումը չի բերում ուսանողների և բուհերի կողմից ակնկալվող արդյունքներին: Հետևաբար, երկու կողմերի համար հասկանալի երկխոսության համար պատշաճ շրջանակի մշակումը գլխավոր մարտահրավերներից մեկն է: Այստեղ կարևոր խնդիր է թե ինչպես են գործատուի կարիքները արտացոլվում կրթական ծրագրում՝ ապահովելով ապագա աշխատուժի անհրաժեշտ ածը կրթական ողջ գործընթացում: Հոդվածում քննարկվում է «համատեքստային գնահատումը» որպես գործատուի համատեքստը կրթական միջավայր տեղափոխելու հիմնական գործիք: Այսպիսով, հոդվածը անդրադառնում է գործատուի և բուհի միջև երկխոսության լավացմանն ուղղված շրջանակի մշակման

կարևորությանը նպատակ ունենալով բարելավել ուսանողների գնահատումը և ապահովել ուսանողների առաջընթացն ու ակնկալվող արդյունքների ձեռքբերումը:

Առանցքային բառեր. *գործատուների ներգրավում, հմտություններին ձեռքբերմանն ուղղված ուսուցում, գործատուների հետ հաղորդակցում, ուսանողների գնահատում, համատեքստային գնահատում:*

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ВНЕСЕНИЕ КОНТЕКСТА РАБОТАДАТЕЛЯ В ОБРАЗОВАНИЕ: РАМКА ДЛЯ ВОВЛЕЧЕНИЯ РАБОТОДАТЕЛЕЙ

Вовлечение работодателей в учебный процесс все более подчеркивается в стратегии развития образовательных програм учебных заведений (УЗ). Однако, основным замечанием работодателей, остается недостаточная степень подготовленности студентов для рабочего места. Работодатели ожидают готовых для карьеры выпускников. Выпускники же ожидают, что УЗ должены обеспечит связанное с работой образование. Следует заметить, что методы взаимодействия работодателей с образовательными институтами пока не дают должных результатов, как для работодателей, так и для выпускников. В данной работе основным методом решения вопроса считается усовершенствование процесса обучения вовлечением работодателей и их рекомендаций в образовательную программу. Большим недостатком инструментария взаимодействия усматривается малая эффективность коммуникации сторон. Одним из методов усовершенствования коммуникации трех заинтересованных сторон предлагается разработка специального протокола диалога понятного для всех заинтересованных сторон. Важной задачей является переформулирование запросов работодателя в элементы учебных программ и обеспечение необходимого прогресса обладения студентами практических навыков в течении всего процесса обучения. Как основной метод обеспечения прогресса студентов берется соответствие методов оценивания студентов и ожидаемых выходных результатов. В работе обсуждаться понятие "контекстной оценки" как основного инструмента для переноса контекста работодателя в образовательную среду. Обсуждается важность формата диалога между работодателями и УЗ с целью получения требуемых качеств системы оценивания студентов. Предлагается рамка коммуникации нацеленная на выявление элементов внедрение которых в образовательный процесс обеспечит заранее запланированный прогресс обучаемых для обладения практических навыков.

Ключевые слова: *вовлечение работодателей, обучение основанное на компетенциях, коммуникация с работодателем, оценка студентов, контектуальное оценивание.*

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