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Transformations in Ukrainian Culture of Learning

ABSTRACT

Objective: Since more diverse audiences attend universities, nowadays, more advanced educational approaches are required. The current study explores the role of culture of learning transformations in facing this challenge. We employ the notion of 'cultures of learning' to draw attention to the socio-cultural, sustainable and competence-oriented aspects of key educational practices. We are focusing on advances in students' learning-culture, which are implemented at the university: interdisciplinary, transformative sustainability learning and experiential learning.

Methodology: The paper considers practical issues related to the educational approaches, their benefits and limitations.

Findings: The results of the observations indicated that students' learning culture was highly affected by educational approaches.

Value Added: We highlight that mutual relations exist between learning-culture and teaching-culture and exactly the student-teacher dialogue should be changed to transform traditional learning in higher education.

Recommendations: Interdisciplinarity and creativity can serve as the key factors in establishing a productive educational cycle that fosters a learning-culture based on students' needs and values consideration.
Keywords: learning culture, higher education, interdisciplinary learning, transformative sustainability learning, experiential learning.
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Introduction

Nowadays, it is the time of transition to a high-tech information society in which the quality of human potential, the level of education and culture is crucial for country's development. Integration and globalization of social, educational, economic and cultural domains foster prospects for the development of Ukraine. According to the UN annual report on the competitiveness of countries in the world, XXI century is determined not by natural or even financial resources, but qualification of the labor force. Therefore, the main goal of every university should be large-scale activities aimed at raising the educational level of the nation. Ukraine's entry into the world of educational space predetermines the domestic educational standards to be aligned in accordance with the norms of the world community. Thus, the objectives for the national education systems involve a radical review of the goals of education: the training of younger generations to participate in the creation of advanced society institutions; the formation of the willingness and ability of young people to participate in environmental socio-humanistic activities; the formation of new forms of sustainable thinking and behavior, which involves the ability to predict, plan, think creatively, critically and be self-critical.

Witnessing all these shifts, we consider that in order to achieve all set goals, it is necessary to change the culture of learning and teaching. In this paper, we are focused on the description of the main changes that have been introduced in the educational system at the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute".

The advanced culture of learning implies the shift from mechanistic approach of skills and knowledge transition to the learning viewed in terms of interdisciplinary, participating, transformative and sustainable context where students, teachers and knowledge coexist and shape each other in a mutually empowering way. With this in mind, we have implemented the educational approaches that match the description above. They are as follows: interdisciplinary learning, transformative sustainability learning, project based and experiential learning.

Theoretical background

Looking back at the landscape of culture of learning related research and science in the context of higher education, certain approaches can be identified. To begin with, we would like to recapitulate the essence of "culture of learning" notion. According to Cortazzi & Jin (2006, pp. 5–20) "culture of learning" describes frameworks of assumptions, values and principles, perspectives towards rewarding teaching and learning. The main requirement to the learning process is participants' interaction as the socio-cultural and cognitive construction of an educational discourse system. Under this explanation, the authors consider the "culture of learning" as one of the elements that construct social and educational integrity.

Similar approach to "culture of learning" is suggested by Charlotte Danielson (2013) in the work "The Framework for Teaching Evaluation Instrument". She states that "culture for learning" refers to the environment in the classroom that reveals the importance of the performance level undertaken by students and a teacher as well:

"It describes the norms that govern interactions among individuals about the activities and assignments, the value of hard work and perseverance, and the general tone of the class. A classroom with a strong culture for learning is characterized by high cognitive energy, by a sense that what is happening there is important, and that it is essential to get it right" (2013, p. 9).

Danielson also identified components of "culture of learning":

- importance of the content and learning;
- high expectations for learning and achievements;
- student pride in work (2013, p. 9).

In other words, the culture of learning or educational environment means value of mutual development, acceptance of personal and professional students' needs. We, as teachers, have to recognize students' intellectual curiosity, values and cognitive energy in order to direct it towards the content of the curriculum. The main idea of this phenomenon is the importance of learning. However, students should also accept their responsibility for the quality of learning and initiating improvements.

Various educational approaches have been proposed to solve the issue of rewarding culture of learning formation. We suggest having a close look at some of them: interdisciplinary learning, transformative sustainability learning, project based and experiential learning.

A growing body of literature has examined the problem of interdisciplinarity implementation: W. Humes (2013, pp. 82–93); J. Caviglia-Harris et al. (2004, pp. 395–403); L.R. Lattuca et.al (2004, pp. 23–48). The common feature of these works is that authors claim the traditional academic system is still focused on separate disciplines and the integration of interdisciplinary approach is still unusual to the undergraduate fields of study despite its numerous benefits. The researchers highlight such benefits as collaborative learning skills and active students' participation in the learning process. The essence of interdisciplinary approach is also described in works of Lawerence (2010, pp. 125–130). He defines the goal of this approach – to analyze and integrate concepts and methods from different disciplines with a view to demonstrating perspectives and wholeness of the same topic from different sides.

Having analyzed works of mentioned authors on the topic, we revealed that interdisciplinarity develops such skills as:

- to inquire multiple ways of knowing and methods to think critically;

- to demonstrate reflective and explicit knowledge of different disciplines functioning, their main issues and limitations;
- to make a reasonable choice in order to find out a creative decision for complex problems;
- to communicate effectively and work collaboratively.

It is also worth taking into account the elements of a successful study in the context of learning through the content of specialized disciplines suggested by the Professor of the University of Aberdeen Due Coyle (2010), namely:

- content element – progress in knowledge, skills and understanding of different disciplines;
- cognitive element – the development of thinking skills, which combines the formation of the concept (abstract and concrete), understanding and language;
- culture – openness to alternative perspectives and collective understanding that deepens the understanding of others and oneself.

Since interdisciplinarity is considered to be the backbone of sustainability, a lot of authors combine these approaches to reinforce their outcomes. In the result of experiments and examinations, we have obtained such educational approach as Transformative Sustainability Learning (TSL).

A well-known transformational learning theorist Jack Mezirow (2011) explained the transformative learning as a theory of comprehension and experience altering. He considers the transformation as a natural phase of the personal development which occurs while every transition from one educational level to the other: from school to college, from university to the working career. The objective of transformative learning is to revise old assumptions and ways of interpreting experience through critical reflection and self-reflection.

Thus, one of the transformative learning targets is to shift the control focus from the external environment into internal which ensures the awareness of own capabilities, enriches and masters professional skills. This idea is supported by Stephan Sterling and Taylor Ian (2006, pp. 349–370) who

claim that transformative learning involves deeper levels of meaning which impact our immediate level of perception. According to the finding of above mentioned transformation theorists, the perceptual changes and following shifts to a more rational and ethical way of worldview inspire the emergence of new ideas and values.

Concerning Transformative Sustainability Learning (TSL), scholars Yona Sipos, Bryce Battisti, Kurt Grimm (2008, pp. 68–86) outline transformative changes corresponding to cognitive, psychomotor and affective domains of learning. TSL combines sustainability and transformative learning in order to contribute to profound personal and societal changes which are reflected in upgraded skills, knowledge and attitude towards ecological, social and economic justice. This connection allows to speak about TSL as a separate pedagogical strategy which employs transdisciplinary, experiential and placed-based learning.

With mostly the same direction of educational goals and learning transformations, we outlined community serviced learning as a practical way of finding solutions to the local issues, connecting practice and theory to correspond students' professional needs. Improvement of culture learning requires students' active engagement into the learning process, however, it is impossible without motivation to learn and master. This approach allows to rise students' motivation by demonstrating real implementation and value of gained knowledge.

Community service learning involves practical activities which students are able to perform for the community. Due to the service learning, students can connect personal, social and professional development. Community involvement usually occurs through the cooperated projects between faculty and community representatives (non-governmental organizations, agencies) where course content is integrated into a real-world context. According to Kerissa Heffernan (2001, pp. 1–8), service learning is considered as integrative, reflective, contextualized, reciprocal and lifelong educational strategy which outcomes are as follows: application of theory in practice,

development of high order thinking skills, self-estimation rising through the development of personal efficacy and identity, improvement of communication and leadership skills, advancement of social responsibility, deeper cultural and citizenship understanding. Faculties also gain some positive feedback and benefits: interdisciplinarity which leads to the new research and ideas, improvement of students learning outcomes, a connection of curriculum with real-world requirements, increase of the level of students motivation and commitment to study.

The evidences from literature sources allow us to conclude that the nature of "culture of learning" is extended and holistic as it combines learning environment, teacher-student cooperation, acceptance of students' needs and requirements, and development of high order thinking skills. In addition, high level of culture of learning is essential for training future leaders in science and technology. It cannot be improved or reinforced with one universal educational approach. In our opinion, only combination of educational tools will ensure the sustainable and productive culture of learning.

Culture of learning at Ukrainian universities

Today, according to rating assessment and employers' feedback, the quality of training at Ukrainian universities satisfies labor market and society needs. Teachers are proficient in designing curricular and delivering training courses. However, few years ago we could observe a number of problems in the system of higher education: students' motivation to study was falling, more and more students were leaving Ukraine to study abroad, employers complained for the lack of soft skill in graduates. The **learning process considered as a series of steps to be mastered** and the ability to recite the information dominated among learning activities. A model of authoritative learning approved the use of such methods as demonstrating, repeating, active memorization of a material.

Nevertheless, our world is changing and teachers should change with it. We, as teachers, have to accept that a teacher is not a unique source of information for students, we are mediators for information. Students need to get skills how to learn, how to obtain and process information, how to determine the relevance and reliability of information. Moreover, students can also be an information source for us as we cannot know everything and the amount of information is endless.

In order to be in a line with educational standards of European countries, we had to change the mode of learning or, in other words, it was necessary to create a culture to support learning. If we compare traditional mode of teaching, we will see its main characteristics: teacher-centered, centralized (teachers control the choice of learning resources and tools), authoritative. Now, it has been converted into learner-centered, life-long, decentralized, sustainable, interactive, and constructive.

In our opinion, one of the key differences between traditional and new learning culture is a shift in the understanding of a place-time framework for training. Previously, training could be held only in special places at a special time: lessons, workshops, conferences, seminars etc. Whereas modern learning culture implies that learning may last for the whole life and take place every day: at the university, on the job, through IT resources and social activities, during communication and any kinds of experimenting.

The university should envisage the creative collaboration of the teacher and the student in all types of educational processes. The transition from a school that sets somewhat simpler tasks and requirements to the university makes for many a difficult and often insurmountable problem. Often a student continues to study at the university as he was still at school. Moreover, the university itself often offers programs that, in form and even content, are either a repetition of the programs of the senior school, or their continuation. The possibility of creative collaboration between a university lecturer and a student means the responsibility of the first and high expectations of the second. Without this, the university education is impossible and useless.

Since "culture of learning" is a holistic term and requires many changes, it could not been transformed by means of only one method or approach. As a response to these challenges, we have chosen those ones, which develop students' autonomy, cultivate high order thinking skills, involve teacher-student collaboration and lead to sustainable outcomes. A significant transformation is also required for universities in terms of what is taught, how it is taught and how disciplines are perceived and structured. These advances are viewed as national targets for changing practices in learning at Ukrainian universities.

Interdisciplinary learning

Although interdisciplinary teaching and learning is highly prioritized in most of the European countries, in practice, there is a lack of interdisciplinary perspective and motivation among teachers in undergraduate studies at Ukrainian universities. It is obvious that interdisciplinary learning has a great number of benefits: the potential to reinforce students' cooperative learning skills and students' active learning; development of analytics and synthesis skills; better understanding of students interests; freedom and flexibility of choice for students; developing of independent learning and investigation strategies; the combination of theory and practice which transforms the attitude toward studying.

Interdisciplinary project-based learning (PBL) is worth considering as a variant to combine science and art disciplines. This type of learning is aimed at the problem or an issue rather than at the separate discipline at a time. It emphasizes more complex and expanded awareness of the topic. A range of information sources from different disciplines, active engagement, and integration of necessary skills allow students to acquire innovative and unexpected results. The nature of PBL resembles the character of sustainable development, which is also multidimensional and integrated. Due to the implementation of the strategy, students are able to define sustainable problems, develop controversial discussion, find supportive evidence, acquire

and process necessary information from a variety of resources and create argument-based solutions.

As interdisciplinarity is considered to be crucial for sustainability and project-based learning, we combined these approaches. A beneficial example of interdisciplinary project-based approach is fourth-year students' presentations related to their majors or future engineering carrier in terms of sustainability. It is worth mentioning that when students search for information relevant to their career, they are more motivated. For instance, students were suggested topics for their choice: perform a sustainability audit for a campus, develop a plan for deconstruction of old university buildings or campus, develop programs for energy consumption reduction, design a green device or technology, develop a recycling and composting program for campus facilities, develop a sustainability Web site to coordinate and enhance students sustainability actions, provide guidelines for greening their future products manufacturing or tools design. In the beginning of the year, students were divided into groups of 3–4 and had 2 months for developing the project. Then, during last two lessons, students presented their projects. The competent jury supported some students' projects that might be implemented: web site on sustainability at university, sustainable campus and sustainable laser technologies.

While applying the interdisciplinary approach, we recommend to beware of some limitations which might affect the outcomes: possible loss of curricula covering due to students' freedom of choice; time-consuming preparation; specific authentic evaluation tools; the unpredictability of a process and its results; sophisticated instructional and assessment strategies.

Transformative Sustainability Learning

As reported by Mezirow (2011) and other supporters of this approach Dirkx & Cranton (2006, pp. 123–139), transformative learning is the extension of consciousness through the transformation of worldview and competences

of a personality. It is an act of changing how we see and do things since it involves senses, feelings, will, value and beliefs. According to mentioned researchers, the three dimensions of transformative learning are psychological change in perception of knowledge, information, and theories; behavioral change in actions (observation, application, experimentation); convictional changes impose revision of beliefs and value systems. Therefore, a focus of recent research performed by Frisk and Larson (2011, pp. 117–128) has been on the combination of critical thinking learning strategies and transformative learning that influences personality's view of the world. By engaging critical reflection and action-behavioral transformations, we are able to impact and initiate educational, ecological, social, and cultural changes. This synthesis of environmental and transformative pedagogies offer transformative sustainability learning (TSL).

Based on the above explanation, it is obvious that TSL implementation should involve critical thinking development techniques, practical skills application, engaging motivating and inspiring. The main goal of this approach is to show students and to move them from inspiration to a real action. The relationship of emotional and cognitive components gives outstanding results especially in such vital issue as sustainability and creates space for great transformations.

TSL pedagogy includes some strategies such as placed-based learning, community service learning, interdisciplinarity and problem-based learning. Place-based learning means learning through the context of students own lives, local communities and environment. Community service learning implies learning through a service conducted on community's problems and needs controlled and monitored by the university. When implementing this approach, we decided to combine placed-based technique and community service learning. Our students were given a task to investigate the problems of their own local community and cities or towns in terms of sustainability and suggest possible solutions. Students could join students mixed abilities and age groups (from the first to the fourth course) but just from one region.

The project duration was 1 academic year. They employed such methods as inquiry of citizens and authorities, analyzing samples of natural resources in case of the pollution issue, measuring and analyzing energy or natural resources consumption, developing alternative energetic solutions etc. At the end of a year they presented their projects. Some of them were feasible and perspective, some required additional resources and work, but in any case, the knowledge and skills obtained while working on the project, which are close to students real life, gave much inspiration, empowered students autonomy and mastered both hard and soft skills of students.

Experiential learning

This is an applied and practical approach, which engage students with real results and consequences, students gain knowledge and skills through direct experience, action and reflection. Experiential learning engages real-world assignments or authentic situations, which should be done with data-driven problem solutions without preliminary checked right answers. The role of a teacher is to facilitate and direct the learner. This approach develops students' autonomy and self-reflective critical thinking skills when students analyze their directions, mistakes, success and come to an evidence-driven solution. The benefits of this approach correlate with those we mentioned in previous ones: active engagement into the learning process, high motivation, facilitating of autonomy, development of creative and critical thinking, student-centered learning environment.

Experiential learning is presented through two options: field-based experiences and classroom-based learning (Ewert, & Sibthorp, 2009, pp. 376–389). Field-based learning involves cooperative learning, community service learning, placed-based learning, apprenticeship and internship. Classroom-based learning includes role-plays, games, simulations, case studies, group discussions, presentations etc. It is obvious that these techniques can be used at any lesson and they are used at our university. Nevertheless, we

would like to share more sophisticated methods such as discovery learning, inquiry-based and web quests, which we implement during science classes. These techniques allow students to explore a particular phenomenon themselves and find out as much information as they can about this phenomenon. Students collect data, observe, generate hypothesis, analyze, develop a solution strategy, and derive conclusions. Teachers are allowed to guide or monitor the process. Although, the most valuable benefit of the discovery learning is that students learn how to plan and manage the learning process, to set goal and take responsibility for the own learning.

Among possible limitations, we can outline time and resources consuming preparation, it needs a framework for the procedure and assessment; it also requires high level of students' educational background; possibility of losing control over the learning process.

Conclusions

Transformation of culture of learning at the universities involves some time, resources and work up front. However, this work is worth doing as teachers see the results. To create rewarding culture of learning, we have generated some recommendations for teachers:

1) Set up high expectations to frame academic and social aspects during learning.
2) Establish supportive learning environment.
3) Encourage teacher-student interaction for students to be heard. Students should not be afraid of demonstrating disagreement or personal opinion. Dealing with disagreement successful is a useful soft skill.
4) Create a safe learning environment for making mistakes. Students should be aware that mistakes are the crucial part in the process of learning.
5) Teach students how to learn, to set goals, to plan and manage the learning process.
6) Provide objective feedback timely.

7) Do not overestimate grades. Real professional life is not based on a grading system. We have to assess and recognize every successful step, effort or improvement individually to encourage students.

This paper has highlighted the necessity of culture of learning transformations in higher educational establishments in Ukraine. We strongly believe that our experience will be of a great assistance for teachers who strive to establish a constructive dialogue with students to foster their professional maturity. Suggested approaches from our paper would eliminate many of the problems existed in some of todays' universities due to a traditional mode of learning. It would be a great opportunity to create a new tradition.

We understand that more research is needed for Ukrainian culture of learning transformation, recognizing diversity of approaches and taking into account recent changes. However, the current study makes it possible to state that the transformation of the learning culture through the interdisciplinarity, TSL and experiential learning in a higher educational institution has a fairly large list of advantages, in particular: forms a positive attitude towards the study; prepares students for further autonomous training and professional activity; provides students with the opportunity to "design" their own knowledge, skills and abilities; helps students to become competitive professionals in an international environment. In order to come out of recession our country should educate knowledgeable and skilled students who are creative, innovative and continuously learning.

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