Rethinking higher education for the emerging needs of society

A new university model bridging skill-gaps and meeting community needs

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Abdullah Gül University (AGU) is a recently established Turkish university serving as a platform for an on-going R&D project aiming at pioneering "New Generation Universities" by blending the three university missions (education, research and societal impact) via innovative approaches and a strong international focus.

INTRODUCTION – AN EXPIRING EDUCATION MODEL REQUIRING A REVOLUTION

Universities are currently experiencing a general crisis in aligning their research functions and curricula with current job requirements and trends. Higher education institutions (HEIs) are no longer seen as the only source of information. Students demand to develop their competencies for real-world problems while moving away from theoretical knowledge. Changes in technology, social life and economics call for a change of traditional teaching and research methods.

Current discussions on the global employment crisis and the future of work have emphasized the urgency of reskilling, lifelong learning, and the way higher education (HE) should collaborate with the labor market. Unfortunately, the lack of insight into upskilling and reskilling requirements and processes makes it difficult for HEIs to prepare students for the 21st-century job market.

In this new digital world where information is easily accessible, a pedagogical revolution is taking place. Traditional teaching methods – transferring theory in the form of teacher-centered lectures is losing its value. The new generation of students (Gen Z) expresses a different set of needs and expectations from education systems. Changes in technology, environment, social life and economy compel students to turn toward new learning experiences where they are more active, motivated, innovative and can develop high-impact skills as well as transferable knowledge.

The changes also affect human resources and reveal different needs in HE. Current trends define new types of teaching methodologies, where instructors should be equipped with instructional design, project management, and coaching competencies. They should be able to provide safe learning environments for students to realize their full potential to become self-directed learners.

»The new generation of students expresses a different set of needs and expectations.«

Technological developments can also be seen as an important sustaining power when considering changes in HE. Flipped classrooms, open online courses for a broader audience, mobile applications using gamification and game-based learning, micro-personalization of learning, powered by continuous measurements (learning analytics), big data-based decision-making to support the improvement of mechanics at system level, are just a few of the new opportunities that have emerged as a result of the digital age.

All layers of global societies are changing and facing new challenges (sustainability, health and food, security, etc.). Because of all these disruptions, a radical change in the HE sector was also in-

evitable. Unfortunately, existing HEIs have been using old paradigms, with some minor modifications since the 16th century (classroom setting, assessment systems, etc.). This shift between societal expectations and the delivery of HEIs has been aggravating the employment crisis affecting our global societies. Young people are particularly concerned, as they are three times more likely to be unemployed than their parents; with about 80 million youth worldwide currently looking for work.

»A radical change in the higher education sector was inevitable.«

These phenomena have a significant global impact. According to the World Economic Forum (2017) and research done by Gartner Inc. (2018), 25% of adults reported a mismatch between their current skill sets and the qualifications required to do their job. In 2019, the World Economic Forum reported that 54% of workers would require upskilling or reskilling over the next five years. Another critical consequence, which has become a global challenge itself discussed at major international events (i.e. ISYEC, 2014, 2016, 2018), is the increase of youth unemployment worldwide, which is above 15% in the European Union, 20% in Turkey and France, and over 30% in Italy and Spain (OECD, 2018). This issue is mainly due to a disconnect between HEIs and society's stakeholders. The skill-gap is widening, as university graduates' knowledge, experience and skillsets no longer match employers' expectations.

These current trends and needs force universities to move to a different educational paradigm. Many have already put significant thought and effort into initiatives to change HE approaches, reshape expiring systems or redesign traditional methods. In a time of booming technological advances and innovations, one of these institutions has proposed the Socio-Technical University Education Model as a response to this shortcoming. Also expressed as New Generation University (NGU), the model, currently implemented at the Abdullah Gül University (AGU) in Turkey, involves a blended learning approach and a competency-based curriculum with a societal impact structure. The current form of this new model is the result of numerous search conferences and the participation of over seven hundred stakeholders from various sectors. It was also significantly shaped by the many discussions held during major HE summits (i.e., NAFSA, EAIE, APAIE, EURIE, Times Higher Education Summits) and visits to renowned HEIs.

A NEW HE MODEL IN THE DIGITAL AGE

Creating a unique university structure

The proposed model is based on a cross-sectoral collaboration between the state, companies and NGOs, which join forces for the design of a more relevant HE system. Since this model requires wider and

stronger participation of stakeholders, close cooperation is established to bring together the leaders of the industry, business and civil society. Its sole purpose is to focus on mutual vision and mission statements for the development of the university and the achievement of its goals.

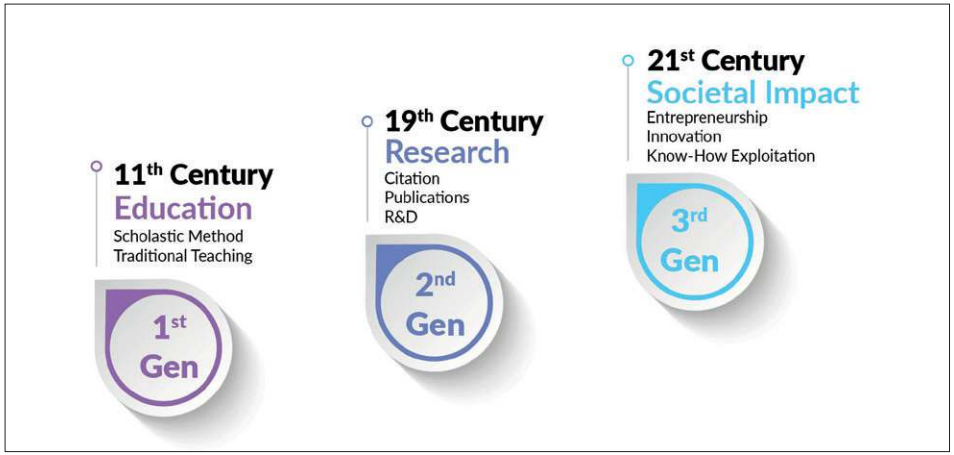
The stakeholders involved in this model aim to launch an innovative HE model that creates a multiplying effect between education, research and societal impact. The result would be the creation of an NGU model generating world-class performance in all three university missions – education, research, societal impact – (Figure 1) with a special focus on societal impact, and the following objectives:

- Contribute to the development of societies and communities by focusing efforts on global challenges and integrating "societal impact" into institutional core activities.
- Bridge the skill gap that exists on international job markets. Meet employers' expectations by creating a new kind of graduate, equipped with the most up-to-date skills, as well as international learning and work experience.
- Build top quality campuses and attract the best talent (staff and students) to create an academic environment and structure to trigger the production of cutting-edge integrated research in the most relevant fields.

Creating a unique university vision

Although giving individual emphasis to education, research, and societal impact, contemporary universities are struggling considerably with the integration of these three functions into their systems. While these functions are often considered separately, this new model sets out to design the multiplicative rather than additive ef-

Figure 1: HE model creating a multiplying effect between education, research and societal impact



fect of these three interactive elements. It also includes the remodelling (reskilling) of education and research functions through contribution to society. The design puts forward a university model that focuses on contribution to society and integrates it with education and research. It is possible to summarize this approach with the following three basic principles:

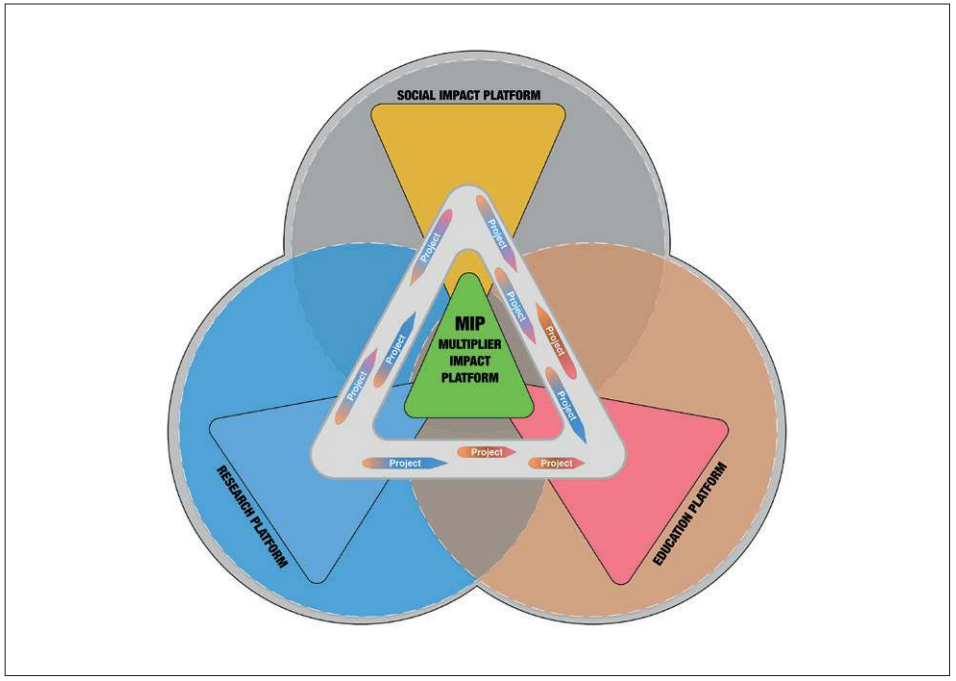
- Community-oriented university
- New education and research paradigm based on real-life experience
- Blended university functions (education, research and community contribution)

Through partnerships and learner-centered approaches, the model aims to develop citizens who can shape the future by converting knowledge into personal and social values. The model has also adopted an approach of training students in 21st century skills, including adaptability, creative problem-solving, communication, teamwork, entrepreneurship, innovation and know-how exploitation to seek solutions to global challenges.

Implementation of the vision via a "Multiplier Impact Platform"

This new model places societal impact in all core institutional operations and enables interaction, through projects, with the other two university missions: education and research. For a multidimensional approach and multiplied impact, all institutional activities are processed through a unique structure called "Multiplier Impact Platform" (Figure 2).

Figure 2: Multiplier impact platform



Implementation of the vision via new innovative units

The implementation of this new model may trigger the creation of numerous unique departments, such as a non-formal education resource center for the social and personal development of youth, a center for continuing education, a center for gifted children and a center for academic development and support.

It also requires the strengthening of key existing units such as the technology transfer office, specialist services for students, the internationalization committee, and the graduate school.

The launch of the "3dC": a competency-based curriculum

In terms of organizing university life, the curriculum is not only a set of courses, but also an element that plays a crucial role in students' personal and professional development. At the same time, it regulates the living space where life experiences and learning are accumulated. The aim is to ensure that individuals will be able to transfer information gained in this space to other living spaces and create added value.

The business world often laments the fact that graduates don't possess the required competencies, which universities should master and train. A competency-based curriculum structure has the potential to eliminate this problem since it emphasizes the cooperation and collaboration of local, national and international companies to provide support for curriculum/course development, meaningful research and placement opportunities. In that sense, a competency-based curriculum approach can be helpful in meeting the expectations of the business world.

»A competency-based curriculum approach can be helpful in meeting the expectations of the business world.«

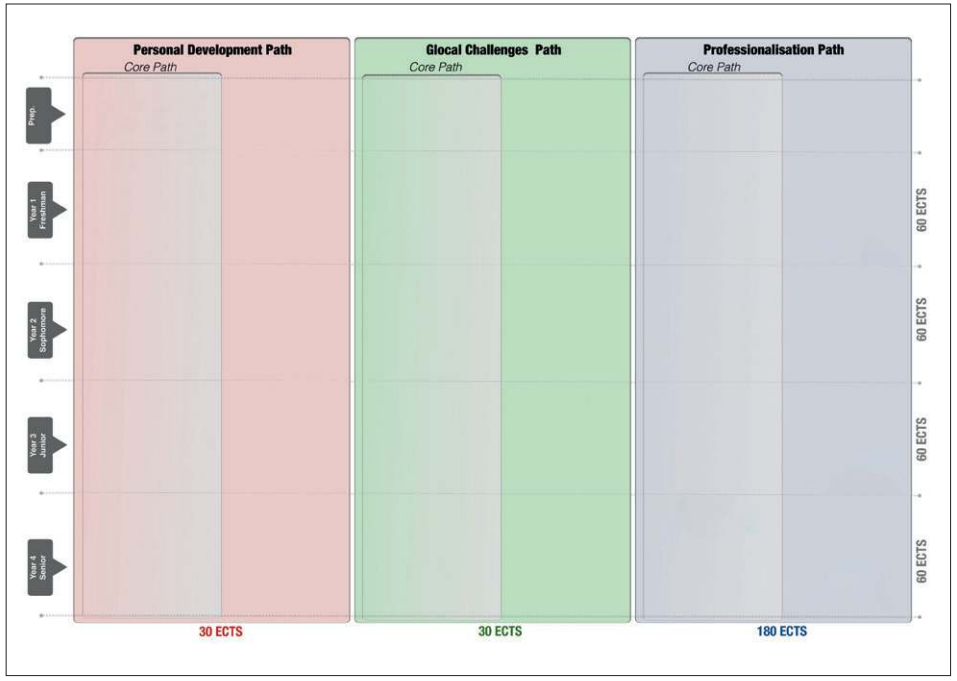
The new curriculum model blends three missions and adopts a constructivist approach by considering competencies. It progresses within the framework of active learning, which aims to place students in a transdisciplinary learning experience.

In light of this, a new innovative "3-Dimensional curriculum (3dC)" strategy was designed (Figure 3) that includes three paths. These are "Personal Development," "Glocal Challenges"[1] and "Professional Development," as well as competency-based, personalized program units called "Capsules." The goals of this new

curriculum are determined in harmony with the "Constructive Development Theory" developed by Robert Kegan, a former Harvard University developmental psychologist. According to his theory (Figure 4), most of the students enrolled in the university are expected to have a "Social Mind" where their sense of self and understanding of the world are shaped by external sources (family, society, ideology, culture, etc.). Beyond meeting their own needs, they consider collective interests and social relationships. "3dC" aims to enable these students to graduate as individuals with an "Autonomous Mind" and with the ability to develop a new "I" with thoughts, feelings and beliefs that are independent of standards and expectations. Graduates also acquire an internal sense of direction and the capacity to create their own course. In this stage, it is crucial to provide necessary counselling for students.

The first dimension, the "Personal Development Path" contributes to that purpose and enables students to develop as creative, passionate and entrepreneurial individuals. This dimension embraces personalized educational content for skill and competence development, enabling students to mature psychologically, socially and culturally. The goals of this path

Figure 3: 3-dimensional Curriculum (3dC)

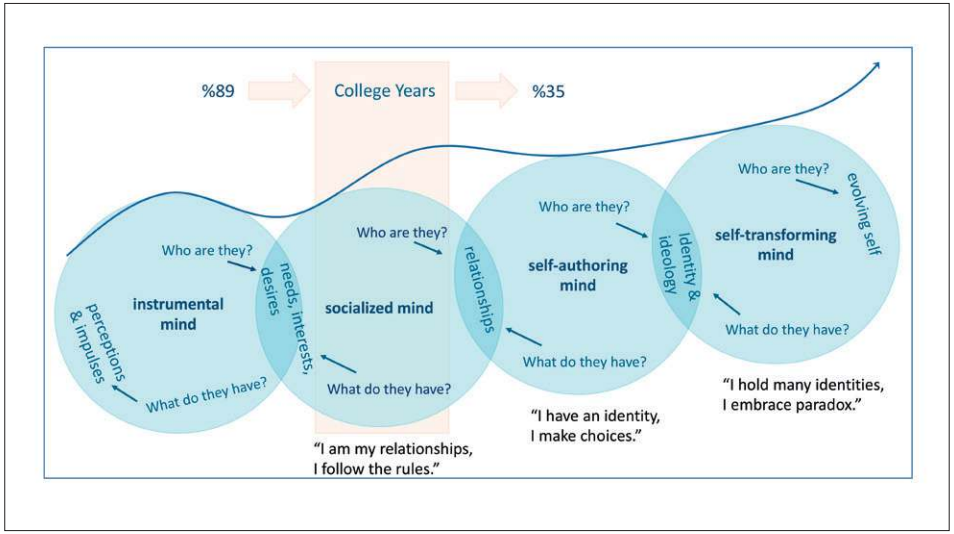


are determined in harmony with Kegan's theory.

The second dimension, "Globe-Local (Glocal) Challenges Path," includes courses addressing "glocal" issues aligned with UN Development Goals, for example: Entrepreneurship & Innovation, Health & Food, Cities & Societies, Immigration, and Sustainability. These courses are taught using learner-centered and active learning principles with the objective of improving students' 21st century skills. Lessons are composed of student-produced content including papers, presentations, ideas, projects, posters, videos and games in small groups, in order to provide solutions for complex global problems. These courses, led by multidisciplinary teaching teams, also enable faculty members to bring their disciplinary expertise into the classroom and use active learning methods.

The third dimension, "Professional Development Path," is implemented in the form of learning units called "Capsules." The capsule system breaks down and replaces traditional course-based curricula as it is based on core multidisciplinary projects requiring learners to receive professional training and close the gap between theory and practice via hands-on approaches. This new method, which is now being tested in the AGU Electrical-Electronics Engineering Department, involves a structure triggering learning according to the needs of real-world problems and also improves students' motivation/engagement as they produce tangible outcomes. An integrated assessment system prioritizing

Figure 4: Illustration of the "Constructive Development Theory" developed by Robert Kegan



the process over exams, a requirement for extracurricular and peer learning, as well as co-teaching and the synchronization of blended materials from different courses make capsule-based learning unique.

»A new kind of graduate equipped with 21st-century values and skills will be more capable of finding solutions to global issues.«

CONCLUSION AND RECOMMENDATIONS

The launch of the NGU project in 2010 triggered several challenges but also produced many rapid achievements. This suggests that the innovative HE model encompasses several pertinent measures with the potential to positively impact our global society and solve the growing skill-mismatch problem. A new kind of graduate, equipped with 21st-century values, knowledge and skills; will be more capable of finding solutions to global issues and contributing to the recoupling process of economic and social prosperity.

HEIs should evolve into the third generation by addressing all three university missions, using a blended approach for an optimal and multiplied effect. The third mission, societal impact, and cross-sectoral approaches should be prioritized by HEIs in order for them to remain connected with all their stakeholders and be able to produce useful academic content and services. Contemporary HEIs willing to be relevant and have an active role in our globalized societies should also open up and embrace internationalization. They should design more programs taught in foreign languages, create international institutional environments via internationally friendly rules and regulations, adopt global educational approaches and methods, produce research relevant to global trends and needs, forge fruitful international connections and collaborations, grow multicultural communities, etc. The new needs and trends will require HEIs to adopt new visions and implement them by establishing innovative units, platforms, curricula, programs, courses, methods, etc. Interdisciplinary research, education and training of faculty members should be emphasized due to the complexity, interconnection and constant evolution of global issues. Solutions to these can only be found using the combination of diverse expertise sets.

It was also observed that the interdisciplinary approach helped faculty members develop their skills and strengthen institutional bonds. Students' skill development, led by a hands-on training approach and a learning-by-doing philosophy, has been significant and appreciated by the industry. Student-led social development projects of the Glocal/Personal Development

paths, where 80% of students take part in volunteering projects, made an observable positive impact on communities. The new model has also received great student approval, with a 100% retention rate of pilot program participants.

In addition to the previously mentioned results and achievements, the model positively affects the approach and mindset of stakeholders towards HE. While they may sometimes experience uncertainty due to the novelty of the project and the lack of a guarantee for future successes, they are all convinced of the project's merits and feel part of a meaningful and groundbreaking initiative.

[1] Globe-local, glocal means to think globally, act locally and think locally, act globally.

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