APPLICATION OF THE MONITORING TOOLS FOR UNIVERSITY DEPARTMENTS OF ARCHITECTURE DEVELOPMENT AND IMPROVEMENT PROJECTS

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Abstract

Projects aimed to improve education systems, especially at universities, are the best way to create the better future, but examples until recently showed that such projects were usually too slow in implementation and sometimes avoided. Recently, universities have become aware that trends and needs are changing almost on daily basis and that improvement of the system once in a few years is not sufficient, rather the improvement is continuous process. In that regard, departments' management should become more open to such improvements. Opening of the universities to more improvements brought number of issues regarding what exactly and how improvements should be implemented. Decision making in such project implementation should be made based upon clear evidences and trends. This paper assesses and focuses to the application of monitoring and evaluation tools in project management for tracking development of university department of architecture and will propose a set of activities and performance indicators in support to implementation of strategic objectives believed to contribute to better education process. In addition, the paper suggests how and which results in each phase of the project implementation should be monitored as a basis for assessment of the project goals in improvement of organizational effectiveness and efficiency, curriculum development, staffing, students participation, including stakeholders engagement, recognition of the department and market validation, taking quantitative, qualitative and psychological aspects into consideration.

Key words: *Monitoring and Evaluation, Department of Architecture, Education System*
JEL code: I23

Introduction

As it is widely known, education systems were sometimes reluctant and slow in their major development and changes. Traditionally, universities were particularly unprepared for major changes and were not willing to adapt to new challenges. All of this was true until recently, when the development of information technology enabled access to the information of interest worldwide.

Thus, the development of IT technology has enabled the academic staff to constantly upgrade their knowledge and continue their education and research even more in their specific fields of expertise and interest, but in the same time it had made it easier to do so. Students also have access to almost everything they need to increase their knowledge today, but also insight in organization, curriculums and specific novelties in education at the universities worldwide.

Universities today, and the education in general, have changed and developed a lot. A knowledge and new developments in science are not far away anymore, but easily accessible. The whole concept of the education changed and have switched from basic repetition and application of knowledge to creative and problem solving knowledge. It is now required from students not only to adopt the sound principles and knowledge, but to develop critical thinking on subject matter. In this regard, teaching staff should continuously expand their knowledge,

research, creativity and teaching methods. This process should be supported by development of laboratories and equipment. University administrative organization is supposed to provide quick and reliable services to employees and students. Cooperation with external stakeholders, especially future employers and companies needs to be established and properly addressed to modernize curriculums and fit them to the actual needs and trends in practice and science, student internships during the education included. Thus, the improvements of the university architectural departments to address mentioned challenges are continuous process. However, this approach must be organized and carefully designed. The goals need to be set up for specific period of time and taking in consideration resources available. Based upon such analyses, project and its activities can be designed, while inputs and outputs can be programmed.

Since such approach is a continuous process, special attention should be paid to project monitoring and evaluation. Monitoring and evaluation are important segments of the project implementation.

"Why Measure Performance?

✓ *If you don't measure results, you can't tell success from failure*

✓ *If you can't reward success, you're probably rewarding failure"*

Osborne & Gaebler,

Reinventing Government (1992)

Monitoring and evaluation enable project managers and stakeholders to track project performance in time, to oversee results achieved during the project implementation and provide performance based decision making in project implementation and application of corrections in approach if needed.

Project description and theory of change

This paper discusses the guidelines for the development of monitoring framework for the improvement of imaginary department of architecture at imaginary university and it is not focused to any particular department of architecture, but it is based on the experience and insights from departments of architecture in Bosnia and Herzegovina. Most of departments of architecture in Bosnia and Herzegovina share the same or similar issues, problems and challenges.
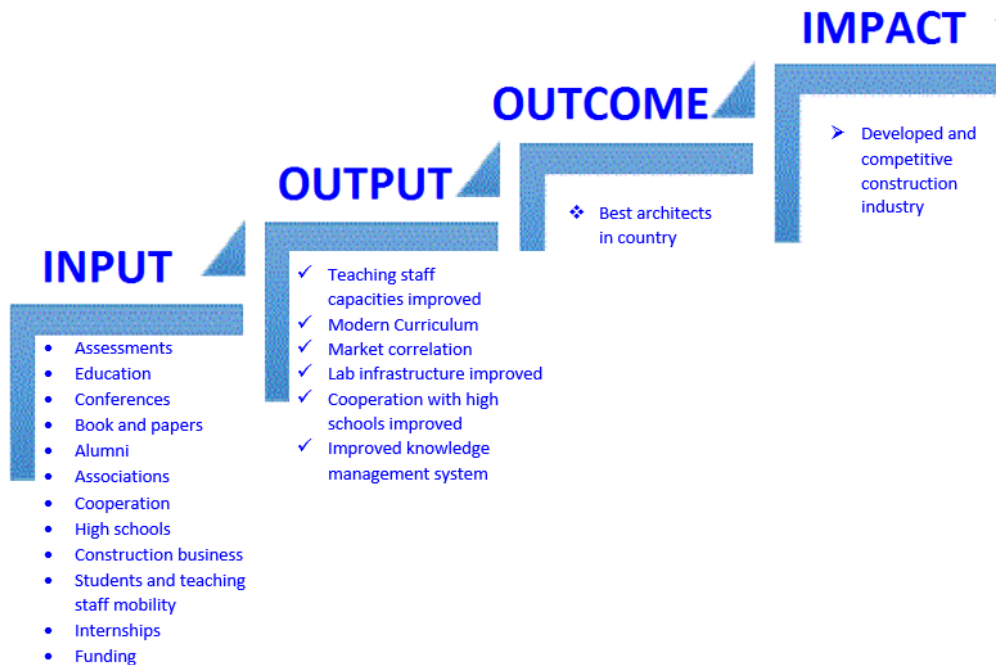
Fig. 1. **Theory of Change**

Source: Authors' construction

The theory of change, graphically illustrated above shows that by continuous improvement of capacities and referential teaching staff, continuous assessment, improvement and modernization of the curriculum, improvement of the labs infrastructure, cooperation with businesses, professionals and alumni associations, selection of freshmen through integrated cooperation with high schools and upgrade of additional students skills could generally lead to the development of most competent and recognized architects and professionals in the country which will have impact on more developed and competitive construction industry.

The project has six project purposes focusing to each topics mentioned in theory of change, with a set of activities believed to support each purpose output. Structure of the project is presented at Fig. 2.

The first project purpose is to continuously improve capacities of teaching staff as a foundation for any further development. The creation of surrounding and working environment in which academic staff can develop continuously and improve research, knowledge and expertise is mandatory precondition. Further, it would lead to the recognition by the wider scientific community and would increase to the individual, department and university visibility and reference.
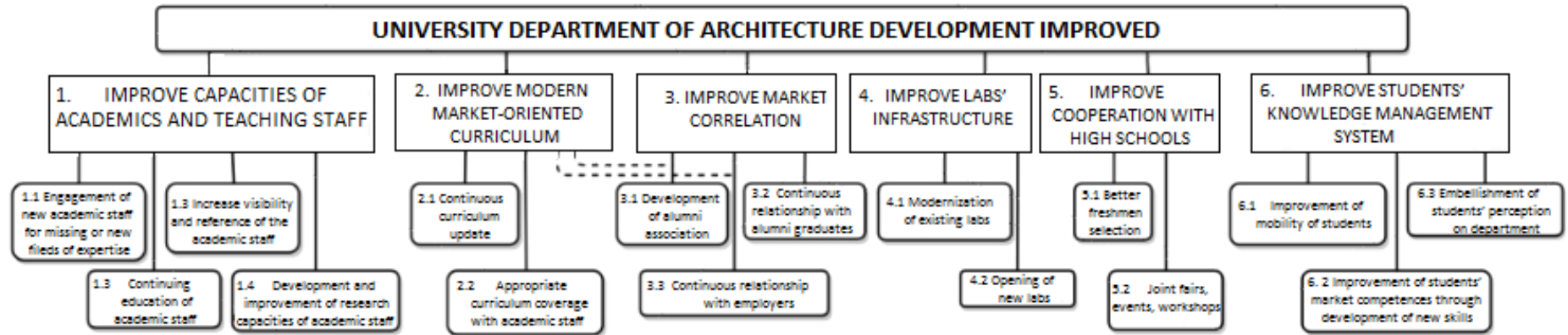
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Fig. 2. **Project Results' Framework**

Source: Authors' construction

Curriculums at departments of architecture should be continuously assessed, updated and modernized to follow development and application of new materials, procedures and technologies, as well as new achievements in architecture. However, cooperation with domestic and international construction industry is absolutely necessary in the process of curriculum improvement.

Establishing and maintaining of relationship with construction and design industry as employer of the cadre graduated from the university is of outstanding importance to produce architects of their expectations. This approach should be complemented with maintaining of relationship with alumni association of the former students to get appropriate support, experience and opinion exchange in improvement of the department.

Significant role in implementation of the project plays the infrastructure and labs that should provide the working environment and a solid foundation for students work and knowledge gain. The existing laboratories should be evaluated and fitted with the modernised equipment according to the curriculum needs and new labs developed and opened.

As the department develops, the proper freshmen selection must be ensured. Through the high school cooperation and joint fairs, competitions, exhibitions and projects of academic staff and high school students, the insight to the freshman knowledge can be gained resulting in better freshman selection and better graduates at the final.

The extra curriculum tutoring classes for additional skills should be organized for students to provide an additional boost to them and to improve their market competences. It will make them more competitive at the employment market. Department will also cooperate with alumni association through university international relations office to enable and implement student exchanges and internships. Development and improvement of the relationship with alumni association is important task for further development of the external-internal department cooperation and feedback.

The project logframe is constructed for this intervention that establish relationship among resources, activities and processes that must be in place in order to achive objectives and goals, through logic of this causal links, but it is not presented in the paper due to length.

Monitoring system

Monitoring system for this project is designed to get optimal triangularly approach. This system includes number of performance indicators for quantitative measures, capacity index for qualitative measures and perceptive standpoints of students, employers from construction and design businesses and alumni of ex-students of the university that are professional architects now. Such approach will provide findings from different perspectives in light of developments made by project implementation.

"Performance indicators are one of many tools to help answer the question: How do you know what you are achieving? One definition of a performance indicator from an NCOSS publication is: A numerical measure of the degree to which the objective is being achieved. Performance indicators are usually seen as numerical measures of achievement that are easy to collect and use. In theory, they can only be derived for things over which you have control, however in practice of people don't have absolute control over anything and so 'having control' is really a matter of whether there is enough control for your purpose.

A more sophisticated definition from the Office of Public Management is: A performance indicator defines the measurement of a piece of important and useful information

about the performance of a program expressed as a percentage, index, rate or other comparison which is monitored at regular intervals and is compared to one or more criterion." (Bullen, P., 1991)
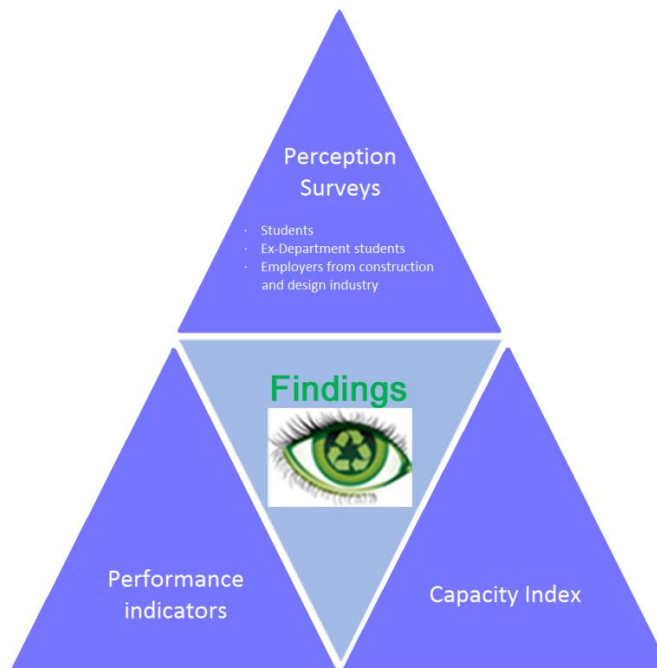

Fig. 3. **Monitoring System**[†††]

In this particular project, performance indicators are designed to measure quantitative aspects of the outputs/outcomes of the project and need to be practical, feasible, cost-efficient, sensitive to detect change in desired outcome/outcome, distinct and with possibility for data disaggregation.

The proposed performance indicators for the Purpose 1 – Improve capacities of academics and teaching staff are as follows, but not limited to:

> ➢ Percentage of curriculum courses given by professors with closely related scientific field;
> ➢ Number of books published by department academics;
> ➢ Number of research papers by department academics published in indexed journals, magazines or conference proceedings in academic year;

[†††] Authors' adaptation from http://www.gefieo.org/event/s/webinar-systematic-triangulation-applied-identification-evaluation-findings

➢ Number of citations of department academic staff in academic year;
➢ Number of research projects conducted at the department in academic year.

The appropriate performance indicators can also be developed for the other five project purposes.

The Architectural Department Development Capacity Index (ADDCI) could be developed for this imaginary project to provide a realistic and objective evaluation of the improvements at the department. This index could establish and measure six dimensions (one dimension for each project purpose), with total of sixteen considered elements (one for each activity from *Figure 2*). Suggestion is that each element is graded on a five-point scale, but not mandatory. In this particular case, maximal number of points that department could earn is 80, while results would be reported in number of points awarded and/or percentage of maximal available number of points. The example grading for the project element 5.2 of the Purpose 5 (*see Figure 2*) is suggested as follows:

0 points – The architectural department have no any type of cooperation with high schools at all;

1 point – The architectural department has occasional or ad-hoc cooperation with high schools;

2 points – The architectural department has periodical cooperation with high schools, but prepares annual cooperation plan with high schools;

3 points – The architectural department conducts annual cooperation plan with high schools at the local community level through organization of joint events, fairs, competitions, exhibitions, summer schools, projects, research and other types of events;

4 points – The Architectural department conducts annual cooperation plan with high schools at the national level through organization of joint events, fairs, competitions, exhibitions, summer schools, projects, research and other types of events;

5 points – The architectural department conducts annual cooperation plan with high schools at the national level and abroad through organization of joint events, fairs, competitions, exhibitions, summer schools, projects, research and other types of events.

The Evaluation Committee should be established to conduct ADDCI survey every year. The Evaluation Committee should be consisted, but not limited to the representatives of department, university, students, construction and design business, possibly representatives of the architectural and professional chambers and associations.

This tool can have extended application as well. It can also be used by ministries of education to assess rankings in capacities of departments of architecture within their authorities and to support decision making concerning new projects design, action plans or just to simply identify areas for specific interventions and based upon the findings from the assessments.

Complementing aspect of the Monitoring Plan is perception of students, employers from construction and design companies, as well as former students of the department that are professionals now. All of them can provide valuable information of interest for the department

to be used for continues development, upgrade and improvement. Such opinion explorations surveys could be conducted annually or biannually, subject of budget constraints. Such sound monitoring framework can further serve as a solid foundation for the different evaluation directions.

Conclusions

The designed and organized monitoring framework is valuable set of tools for tracking implementation of the project focused to development of university department of architecture. It enables:

➢ Tracking the project results and achievements, compare them to the expected ones, and ensure project fulfil the goal in full;

➢ Taking corrective directions of the project implementation, if interim results have not been achieved;

➢ Bringing together academic and administrative staff, university staff, students, alumni, professional architects, designers, engineers, construction and design industries and businesses and other stakeholders in a common goal and give the common ownership of the project and collaboration;

➢ Increased responsibility of the department and university management and associates;

➢ Solid foundations for future development and improvement projects;

➢ Opportunities for the authorities to identify gaps for future focused interventions — and internal department rankings and

➢ Application of the modified monitoring approach to other university departments of different affiliations.

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