

Joanna Piękoś, Ph. D.

The School of Banking and Management in Krakow

jpiekos@wszib.edu.pl

EFFECTIVENESS MODEL OF DIDACTIC ACTIVITIES IN PUBLIC SCHOOLS OF HIGHER EDUCATION

Introduction

There are numerous reasons for the necessity to develop and implement comprehensive methods to increase the effectiveness in achieving the goals of teaching activities in schools of higher education. An ongoing verification of the effects of the implemented didactic processes becomes necessary in the conditions of limited resources and an increasing competition on the market of educational services. An effectiveness evaluation system should be developed in line with the needs and the specificity of conditions so that the implemented measures allow for the best possible assessment of dependencies that occur in the process and of the results obtained¹.

The aim of this paper is to present a comprehensive measurement and verification method of the effects of didactic activities in a school of higher education. The starting point of the model is the developed and published process approach to university's didactic activities² as well as J. Maciąg's proposal of a multifaceted assessment of the value of educational services³.

1. Determinants of the measurement and assessment of the effectiveness of university's didactic activities

The activities of public schools of higher education are subject to conditions that have a major impact on the character and assessment of the effectiveness criteria. The literature on the subject points at the specific qualities of these institutions. They are not profit-oriented, they carry out various activities, the results of the activities are difficult to assess, they are subject

¹ J. Czekał (ed.), *Zarządzanie procesami biznesowymi. Aspekt metodyczny*, Wydawnictwo UEK, Kraków 2009, p. 195.

² J. Piękoś, *Działalność dydaktyczna w ujęciu procesowym* [in:] M. Chmielecki, K. Wach (ed.), *Współczesna organizacja w procesie internacjonalizacji*, „Przedsiębiorczość i Zarządzanie”, Volume XIX/10, Part III, Wydawnictwo Społecznej Akademii Nauk, Łódź – Warszawa 2018, p. 239.

³ J. Maciąg, *Wieloaspektowa ocena jakości usług edukacyjnych (na przykładzie AWF im. Jerzego Kukuczki w Katowicach)*, „Nauka i Szkolnictwo Wyższe” 2011, No. 2/38, p.128.

to various stakeholders that have different views on the objectives of the activities and the dependencies between the investments and results are not easy to describe and measure⁴.

The specific qualities of educational services have a significant impact on the methods of the measurement and assessment of academic activities effectiveness. According to the literature on the subject educational services are immaterial, inseparable, unstorable and heterogenous⁵.

Academic activity takes place mainly in the sphere of immaterial values and only to a certain extent belongs to the sphere of material values. In the course of academic activity, the specific asset, i.e. knowledge, is subject to processing. It is possible to assess the expenditure necessary to acquire, process and transfer knowledge but it is difficult to assess the results of its processing as they may occur with a delay and are subject to various factors concerning all areas of social life⁶. In the attempt to define the concept of academic effectiveness and especially of its assessment, one should consider the following conditions that determine the crucial criteria for the evaluation of academic entities:

- mission and objectives of public schools of higher education,
- characteristic features of their services,
- regulations resulting from legal provisions that define financial management of public schools of higher education.

Pursuant to the Act on Higher Education and Science⁷, the schools of higher education and other research institutions carry out a mission of particular importance for the nation, they make a key contribution to the development of culture as well as to the establishment of moral standards in public life. The achievement of these objectives is difficult to assess and evaluate.

According to T.Wawak, when implementing its main goal, a school of higher education should be aware of social responsibility. Nevertheless, the idea to serve the society in the conditions of strong competition cannot determine the direction of university's activities. It is desirable to maintain adequate balance between the desire to maximize the profitability of invested capital and to serve the society. The management, having in mind the basic objective

⁴ J. Wolszczak-Derlacz, *Efektywność naukowa, dydaktyczna i wdrożeniowa publicznych szkół wyższych w Polsce – analiza nieparametryczna*, Wydawnictwo PG, Gdańsk 2013, p. 27.

⁵ S. Cichoń, *Konsumpcja usług edukacyjnych w szkole wyższej i zarządzanie jej procesami*, „Przegląd Naukowo-Metodyczny. Edukacja dla Bezpieczeństwa” 2013, No. 2, p.141; B. Ziębicki, *Benchmarking w doskonaleniu organizacji usług użyteczności publicznej*, Monografie: Prace Doktorskie No. 6, Wydawnictwo AE, Kraków 2007, p. 24.

⁶ P.G. Pietrzak, *Efektywność publicznych szkół wyższych na przykładzie wybranych uczelni przyrodniczych*, „Roczniki Naukowe Ekonomii Rolnictwa i Rozwoju Obszarów Wiejskich” 2015 Vol. 102, p. 79.

⁷ Act of 20 July 2018 on Higher Education and Science, *Journal of Laws* 2018, item 1668.

of the university, should be follow the principles of economy, entrepreneurship, efficiency and economic accounts⁸.

The presented issues constitute key assumptions in the development of a method of the assessment and evaluation of the organizational effectiveness of university didactic activities.

2. The essence of effectiveness of public university's activities

The considerations on the effectiveness of teaching in schools of higher education should begin with the statement that effectiveness is the crucial manifestation of rational management which is one of the conditions for the existence and survival of every organization⁹. Effectiveness is a quality of a system that reflects the efficiency of its operations. Efficiency depends on factors that are assigned to the activities. The factors include: a performer (a person undertaking a deliberate, conscious and arbitrary activity), the target of the activity (an impulse to act), the outcome of the activity (an intended and unintended result), measures and methods applied to reach the target, time and spatial conditions of the activity, the apparatus and materials used by the performer, and finally, the justification of the reasons for the activity. Efficiency refers to the total of practical values of an action, i.e. of its features that are assessed positively¹⁰.

All the authors who deal with the issues of university effectiveness agree that the assessment of university's activities should be possibly¹¹:

- comprehensive - considering numerous various assessment criteria,
- from various points of view – of all stakeholders and processes,
- with the consideration of the needs and expectations of different units as regards university's activities.

A multidimensional assessment of university's activities should be conducted from the point of view of different stakeholders, particularly from the point of view of students, university staff, the implemented processes and the university's external environment: employers, graduates, candidates for studies, financing and opinion-making institutions¹².

⁸ T. Wawak, *Jakość zarządzania w szkołach wyższych*, Wydawnictwo UJ, Kraków 2012, pp. 259 – 260.

⁹ R. Borowiecki (ed.), *Pomiar i ocena procesów kreowania wartości w badaniu efektywności przedsiębiorstwa*, Fundacja UEK, Kraków 2009, p. 13.

¹⁰ A. Stabryła (ed.), *Podstawy organizacji i zarządzania. Podejścia i koncepcje badawcze*, Wydawnictwo UEK, Kraków 2012, pp. 100-102.

¹¹ R. Ryńca, *Zastosowanie wybranych metod i narzędzi w ocenie działalności szkoły wyższej*, Oficyna Wydawnicza Politechniki Wrocławskiej, Wrocław 2014, pp. 74-79.

¹² Ibidem.

The academic institution, as any organization, is a system whose operational results depend both on the input (the inflow of funds and information) and its internal condition, i.e. its potential. The potential of universities consists of their resources as well as the rules and procedures that they follow. The most important university resources include¹³:

- social capital, which consists of students, teaching staff, administrative staff,
- intangible assets, particularly the image of the university on the market of educational services and the labor market, organizational culture, internal law, managerial skills of the management staff, the cooperation with foreign universities, business entities and employers,
- material assets – financial reserves, usable area and its structure, technical specialist infrastructure, particularly laboratories,
- information resources – documentation of past events, library resources, access to external knowledge bases,
- know-how regarding the developed educational standards: well-designed curricula, teaching quality assurance and assessment systems, proprietary process handling IT systems.

According to R.Z. Morawski, education is university's activity consisting in providing intellectual products and services; consequently university is subject to the same principles of structure and functioning as other systems. Problems arise when it comes to defining products as the results of university's operations. The Author of the article assumes that in an educational process the results are graduates' knowledge, skills and qualifications, bearing in mind that knowledge belongs to the immaterial sphere, is extremely wide and subject to numerous perturbations, and is carried by human beings. As a result, it is impossible to assess it precisely but one can find the ways to its development¹⁴.

There are the following measures of university's success¹⁵:

- University's scientific successes, which results from the activities of researchers and scientific centers

¹³ A. K. Koźmiński, *Misje i strategie szkół wyższych*, [in:] J. Woźnicki (ed.), *Model zarządzania publiczną instytucją akademicką*, Instytut Spraw Publicznych, Warszawa 1999, p. 244.

¹⁴ R. Z. Morawski, *Wstępna charakterystyka elastyczności systemu kształcenia* [in:] J. Woźnicki (ed.), *Benchmarking w systemie szkolnictwa wyższego. Wybrane problemy*, Fundacja Rektorów Polskich, Warszawa 2012, p.12.

¹⁵ Ł. Sułkowski, R. Seliga, *Uwarunkowania w osiąganiu sukcesu w zarządzaniu uczelnią wyższą w Polsce*, *Zarządzanie i Finanse*, „Journal of Management and Finance” 2016, vol. 14, No 2/1/, pp. 387-391.

- University's development which determines the progress in scientific and didactic achievements that is reflected in the position of the university in reliable ranking lists and expert assessments.
- High teaching quality, which results in graduates' successes on the labor market, leading to an increase in the number of candidates willing to study and, consequently university's wide selection opportunities.
- Attractiveness of education for students and the labor market, which is related not only to the quality of teaching but also to the offer of the fields of study that give the graduates better opportunities for development and provide employers with opportunities to employ staff with desired qualifications.
- Commercialization of research, which is the result of applied research projects, inventions, patents, and innovations that are implemented in business environment.
- The culture-making role of the university as a result of its social and cultural activities or even of the implementation of the concept of a socially responsible institution.
- Prestige, ethos, and immaterial values that are reflected in the university public image.

Effective management of resources makes it possible to achieve university's strategic objectives. In the assessment of university's operations, one should not neglect financial aspects. According to T.Wawak, the decisions of university management should result in the situation that the revenues from the sale of research and teaching services exceed the costs and guarantee surplus that is indispensable in development self-financing. Investing the surplus in improving the quality of work and processes, as well as improving the services and adapting them to the requirement of the competitive market, will ensure a success of the university whose services will have competitive price¹⁶.

3. Effectiveness model of processes in university's didactic activities

The proposal for an effectiveness model of didactic processes in a school of higher education was developed on the basis of the Author's wide literature research, her experience and knowledge as well as experts' opinion. The process concept of the didactic activity of the university¹⁷ and J.Maciąg's idea of multi-faceted evaluation of educational services¹⁸ constitute the starting point of the model.

¹⁶ T. Wawak, op. cit., p. 258.

¹⁷ J. Piękoś, op. cit., p.238.

¹⁸ J. Maciąg, op. cit., p. 128.

The following model assumptions were accepted:

- University's organizational effectiveness should be interpreted in a purposeful manner. This means that the effectiveness assessment of university's activities comes to measuring the degree of achievement of the intended objectives and the use of resources. The objectives are the fundamental measure of the effectiveness assessment criteria; however, assumption must be made that the achievement of the main organizational goal requires the achievement of several intermediate targets.
- Didactic activity should be considered in its entirety, taking into account the processes that provide the necessary inputs that are transformed in further processes.
- Didactic activity consists of processes related with enrolment, teaching, graduates and the labor market. This is a process classification proposal presented by the authors of *A University Benchmarking Handbook*¹⁹.
- The improvement of didactic activities in higher education takes place on two levels: considering the inputs and outputs of each process and analyzing university resources (its potential) and the final outcome of didactic activities – its image on the market of candidates for studies, the labor market and the educational market.
- The verification of university teaching outcomes should be conducted:
 - in a comprehensive way, which requires a selection of effectiveness criteria that enable evaluation in several dimensions adequate to the specific features of university operations, i.e. from the perspective of didactics, marketing, economy and organization;
 - from the point of view of the processes that make up didactic activity: enrolment, teaching, graduates and the labor market;
 - with the consideration of the needs and expectations of different groups of university stakeholders: candidates for studies, students, university staff, graduates, employers and the university itself.

The presented approach to the evaluation of university didactic processes effectiveness is given in Table 1. The shaded areas are the common value of the matrix row and column.

The output element of the study enrolment process consists of candidates with the required qualifications for studies. The university develops its strategic potential through the selection of candidates, which is crucial in achieving its didactic objectives. The candidates

¹⁹ F. van Vught, A. Balanskat, P. Benneworth, *Benchmarking In European Higher Education. A University Benchmarking Handbook*, Brussels, ESMU, 2010, p. 48.

expect professional assistance from the university in choosing the direction of their further development. Their needs become the main criterion in the assessment of the enrolment process effectiveness. The model being described shows that that the enrolment effectiveness is analyzed through the following dimensions:

- Didactic – where the main assessment criterion is the program offer. Talented candidates for studies expect the university to enable them further development of their competencies. The program offer is a crucial element of university's response to their needs and requirements.
- Marketing – where the main criterion is the satisfaction level of candidates for studies from the enrolment procedures. Reaching desired candidates for studies with the information about the program offer and their effective acquisition requires a coordinated enrolment policy of the university. The program of enrolment activities should include ambitious projects whose aim may be even to shape future candidates properly so that they can meet university's requirements as students.
- Organizational – where the compliance of the process objective with the strategic objectives of the university is the most important criterion of the effectiveness assessment. The degree of the achievement of the process objective should be assessed without forgetting other important aspects of organizational processes, i.e. information flow, the process flexibility and its duration.

The input element in didactic processes consists of material and immaterial resources of university, including the students that are acquired in the enrolment process. The investigated effectiveness model of university didactic activities shows that education should be analyzed in several dimensions:

- Didactic – where all components of the education process are assessed:
 - program offer – this is one of the determinants of undertaking studies at the university; however, for candidates with unique qualifications it is also a motivating factor and, consequently, the assessment of the study offer should take into account the attractiveness of individual fields of study among the candidates with the highest qualifications to study, the degree of internationalization of study, or the study dropout rate;
 - curricula – which should be assessed with the consideration that the acquisition of talented students obliges the university to provide them with opportunities for

development and self-realization; curriculum personalization is one of the main attributes here,

- study organization – this refers to such indicators as the student-teacher ratio, the number of students in groups, timetables, the number of classes cancelled due to organizational reasons,
- teaching methods – this refers to the ways and techniques of transferring knowledge, expanding skills and shaping student attitudes. This is manifested by the number of hours in computer labs, the number of students involved in scientific research, the offer of trainings, workshops, and employers' academies,
- teaching conditions – these depend on the university premises and the equipment that is available in lecture rooms. Students expect, apart from a high-quality teaching assistance, an interest in their health and a wide offer of social and cultural activities. The assessment should also concern the hygiene of rooms, corridors and toilets, as well as the availability of places for individual work and food outlets.
- qualifications and achievements of the research and teaching staff – they have an impact on the choice of teaching techniques, the level of preparation to teach, the substantive content of the presented material and particularly on the authority that is crucial in the master-disciple relation,
- qualifications and achievements of students – the analysis of students' achievements gives the first results of the didactic process. The measurable study effectiveness indicators are: the distribution of examination grades, the number of students repeating a year, the number of the first-year students that discontinue their studies, the graduation timeliness index, the average duration of studies as well as the number of scholarships awarded, the number of decisions on individual course of studies, the number of diploma theses awarded by external bodies, etc. Nevertheless, a crucial impact on the above indices is affected by students' qualifications that are reflected by the number of laureates and finalists of contests, the minimum level of the qualification threshold, the number of students with a maximum number of qualification points, etc.
- Marketing – where the assessment involves the satisfaction level of the main participants of the didactic process:
 - students – the basis for the assessment is the questionnaire of student satisfaction level which takes into account the opinions about: educational offer, administration

staff, conditions of teaching, interpersonal relationships, the knowledge transfer process. It is advisable that the results of the questionnaire are supplemented by indices regarding students' complaints, the number of accepted students' appeals, etc.

- university staff – the assessment of the satisfaction level of university didactic and administration staff should be a standard in Poland as they, being the main participants of the didactic process, have a major impact on its course. The assessment should consider working conditions, interpersonal relationships, opportunities for development and it should be supplemented by indices on the number of promotions, salary distribution, the average employment time, the number of staff complaints.
- Economic – didactic processes should be economically assessed and consider:
 - the cost of process realization, which is presented by such indices as the unit cost of education, the number of overtime hours, laboratory and teaching rooms facility costs of laboratories and lecture rooms,
 - income – with the consideration of the subsidy level per student, the income from postgraduate studies, courses, trainings and extramural studies.
- Organizational – the assessment of teaching in the didactic dimension constitutes the basis for the estimation of the compatibility of the process with the strategic goals that are formulated in the organizational context. The objective of the didactic process must comply with the university strategic assumptions. The university conducts market segmentation and organizes the didactic process adequately. It is obliged to implement consistently the selected strategy by choosing either elitist or entrepreneurial education. The other important aspect of the effectiveness assessment of education in the organizational dimension is the way it is planned. The effectiveness of the process is assessed also with the consideration of its flexibility, i.e. the ability to change quickly, the information flow, especially among its participants, and the level of bureaucracy.

Table 1. The effectiveness assessment method of university didactic activities

Effectiveness dimensions	General criteria of effectiveness assessment	Main effectiveness criteria	RECRUITMENT	EDUCATION	GRADUATES	LABOR MARKET
Didactic	Components of educational process	Study offer				
		Curricula				
		Study organization				
		Teaching methods				
		Teaching conditions				
		Qualifications and achievements of research and teaching staff				
		Qualifications and achievements of students				
Marketing	Stakeholders' satisfaction level	University authorities				
		Candidates for studies				
		Students				
		University staff				
		Graduates				
		Employers				
	Graduates' professional achievements					
	Research of labor market needs					
Economic	Profitability of activity	Process costs				
		Process related income				
Organizational	Process organization in didactic activity					

Source: Author's research.

The knowledge, skills and qualifications of graduates are the input elements of the assessment operations of the completed processes. The investigation of the opinions and expectations of graduates who enter the labor market as well as the opinions of employers about the graduates are the basis for the improvement of the educational process. The following indices are meaningful for the university: the number of graduates who continue further education in the university on the second cycle, third cycle and postgraduate studies, the number of graduates who are active in the associations of graduates, and the regularity of graduate meetings. The information about employer satisfaction level can be obtained from the assessment of the number of professional apprenticeship offers, employer academies, courses ordered, trainings and postgraduate programs for employees, diploma theses ordered and agreements on mutual cooperation. It is also important to know the employers' opinions about the relevance of the graduates' qualifications to their needs.

The input elements of the processes related to the labor market are both graduates who have just completed their studies and the ones who already are on the labor market. Graduate tracing is currently a common procedure of schools of higher education. However, this is conducted mainly for promotional reasons while the results should be the basis for the verification of the realization level of the strategic goals in the didactic domain of the university. The basic indices that illustrate the professional achievement level of graduates are:

- the number of graduates in company boards and social organizations, and graduates with positions in politics,
- the relative earnings ratio of the university graduates²⁰,
- the relative unemployment ratio of the university graduates²¹,
- the university position in ranking lists based on graduate achievements (e.g. *Kuźnia Prezesów*).

The attitudes and successes of graduates have an impact on the final effect of the didactic activity, on their university's image on the market of candidates for studies, the labor and the educational markets. University image in the marketing dimension of effectiveness is investigated in the context of the satisfaction level of university authorities. It should be reminded that university is also a beneficiary of the value created; its prestige and perception depend mainly on the achievements of employees, students and graduates. This is given by the basic assessment indices, e.g.:

²⁰ Accessible on <https://www.gov.pl/web/edukacja-i-nauka/ekonomiczne-losy-absolwentow> (17.09.2020), based on the report of the Ministry of Science and Higher Education: *Ekonomiczne aspekty losów absolwentów*.

- the university position in ranking lists of schools of higher education in Poland,
- participation in scientific consortia,
- specialist accreditations,
- grades awarded by the Polish Accreditation Commission (PKA),
- categories by the criteria of the Ministry of Science and Higher Education.

The knowledge about graduate careers, the needs of the labor market, the educational needs of modern economy and the analysis of the university image provide information that is necessary in continuous improvement of its didactic strategy. The verification concerns the selection assumptions of the target market of the university activities and the methods of reaching the intended goals. From this point of view, the marketing dimension of the assessment and evaluation of didactic activity effectiveness becomes crucial for improving the functioning of the university.

Conclusions

Every time the analysis of an area of university activity requires the development of individual criteria that are adequate for the assessment purposes and the specific nature of the university. The selection of the indices of the assessment and evaluation of organizational effectiveness should comply with the methodological requirements that determine a correct interpretation of the results. Having this in mind, the Author developed a list of measures that results from the presented model; their examples are given in the article.

Bibliography

- [1] Borowiecki R. (ed.), *Pomiar i ocena procesów kreowania wartości w badaniu efektywności przedsiębiorstwa*, Fundacja UEK, Kraków 2009.
- [2] Cichoń S., *Konsumpcja usług edukacyjnych w szkole wyższej i zarządzanie jej procesami*, „Przegląd Naukowo-Metodyczny. Edukacja dla Bezpieczeństwa” 2013, No. 2.
- [3] Czekaj J. (ed.), *Zarządzanie procesami biznesowymi. Aspekt metodyczny*, Wydawnictwo UEK, Kraków 2009.
- [4] Koźmiński A. K., *Misje i strategie szkół wyższych*, [in]: Woźnicki J. (ed.), *Model zarządzania publiczną instytucją akademicką*, Instytut Spraw Publicznych, Warszawa 1999.
- [5] Maciąg J., *Wieloaspektowa ocena jakości usług edukacyjnych (na przykładzie AWF im. Jerzego Kukuczki w Katowicach)*, „Nauka i Szkolnictwo Wyższe” 2011, No. 2/38.
- [6] Pietrzak P.G., *Efektywność publicznych szkół wyższych na przykładzie wybranych uczelni przyrodniczych*, „Roczniki Naukowe Ekonomii Rolnictwa i Rozwoju Obszarów Wiejskich” 2015, Vol. 102.

- [7] Piękoś J., *Działalność dydaktyczna w ujęciu procesowym* [in:] Chmielecki M., Wach K. (ed.), *Współczesna organizacja w procesie internacjonalizacji*, „Przedsiębiorczość i Zarządzanie”, Volume XIX, Book 10, part III, Wydawnictwo Społecznej Akademii Nauk, Łódź – Warszawa 2018.
- [8] Ryńca R., *Zastosowanie wybranych metod i narzędzi w ocenie działalności szkoły wyższej*, Oficyna Wydawnicza Politechniki Wrocławskiej, Wrocław 2014.
- [9] Stabryła A. (ed.), *Podstawy organizacji i zarządzania. Podejścia i koncepcje badawcze*, Wydawnictwo UEK, Kraków 2012.
- [10] Sułkowski Ł., Seliga R., *Uwarunkowania w osiąganiu sukcesu w zarządzaniu uczelnią wyższą w Polsce*, Zarządzanie i Finanse, *Journal of Management and Finance* 2016, vol. 14, No 2/1/.
- [11] Act of 20 July 2018 on Law in Higher Education and Science, *Journal of Laws*, 2018, item 1668
- [12] Vught F., Balanskat A., Benneworth P., *Benchmarking In European Higher Education. A University Benchmarking Handbook*, Brussels, ESMU, 2010.
- [13] Wawak T., *Jakość zarządzania w szkołach wyższych*, Wydawnictwo UJ, Kraków 2012.
- [14] Wolszczak-Derlacz J., *Efektywność naukowa, dydaktyczna i wdrożeniowa publicznych szkół wyższych w Polsce – analiza nieparametryczna*, Wydawnictwo PG, Gdańsk 2013.
- [15] Ziębicki B., *Benchmarking w doskonaleniu organizacji usług użyteczności publicznej*, Monografie: Prace Doktorskie No. 6, Wydawnictwo AE, Kraków 2007.

Abstract

In the conditions of market economy, the activities of a school of higher education must be subject to continuous transformation and improvement in order to respond to the requirements of educational market and economic and social environments. It is reasonable to implement modern methods in university management that will support university authorities in achieving the intended strategic goals. The implementation of a comprehensive system of improving the effectiveness of didactic processes is necessary in the light of the ongoing legal, economic and social changes. The article presents a model approach to the assessment and verification of the effects of university's didactic activities. The starting point of the model is the developed process approach to university's didactic activities as well as J.Maciąg's proposal of a multifaceted assessment of the value of educational services.

Key words

effectiveness assessment, university didactic activity, effectiveness model