Integrated Evaluation School

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Abstract. The aim of this paper is to present the proposition of truly integrated evaluation school, which is based on holistic vision of scientific research, teaching students, practice and consulting. The need and possibility of its creation relate both to the development of evaluation theory in the field of economic sciences and also to the progress in new ICT technologies. Contemporary conditions for the implementation of projects and programs necessitate the development of increasingly sophisticated instruments of evaluation. The creation and progress of this new school may result from the indispensability of application, in research, teaching, practice and consulting, interdisciplinary approaches utilizing the capabilities of management thoughts development, studying project management and evaluation fields, progress in social science evaluation methods, as well as access to knowledge engineering and artificial intelligence methods.

Introduction

The fast-growing evaluation is still a young, overarching meta-discipline which combines principles of auditing, social sciences insights, decision theory, system analysis and multidisciplinary approaches [1]. Contemporary conditions for the implementation of projects and programs necessitate the development of evaluation schools of thoughts, interdisciplinary scientific research, new educations systems, cooperation and consulting with experts from different areas as well as increasingly sophisticated instruments of evaluation. Traditional approaches to evaluation need to be modified and moved towards integrated evaluation. Opportunities for this type of change may be reforms of higher education and some potential for introducing modern solutions that are adequate for the 21st century.

The aim of this paper is to present the proposition of truly integrated evaluation school of thought, which is based on holistic vision of scientific research, teaching students, practice and consulting. First, core schools of management sciences are presented. Then, selected problems that concern economic evaluation approaches and major conception of new school of evaluation are outlined. Finally, conclusions in line with achieved results are formulated.

Schools of Management

Over the years, new approaches to management have developed. This does not mean that newer approaches have completely displaced previously-known schools. In practice, it turns out that even the oldest ones have contemporary applications. The core schools of management sciences are as follows: the classical scientific management school (the management process school), the empirical school, the human behavioral school, the quantitative and systems approach school as well as the integrated approach school.

The major contributor to the classical school is coal mine director Henri Fayol, who at the beginning of the twentieth century described the management functions (eg. planning, organizing, motivating and controlling) that to a large extent are still valid today. These functions are universal in nature and can apply in management processes analysis carried out in various types of organizations. Despite their universal character, the mentioned management functions sometimes fail under dynamic and turbulent conditions in which contemporary organizations must operate.
Assumptions and principles of the classical school do not always correspond to empirical research results. According to postulates of the empirical school, management sciences are based on the experience of managers and successful cases, which should be combined with theoretical research and on this basis to teach students and businesspeople. Mainly based on practical experience, this approach may be unreliable and more attention should be paid to building theoretical models of phenomena that are heavily dependent on human behavior (important relationships between human behavior and productivity). This kind of approach, however, narrows the research area and the results of analyzes often differ from reality as a consequence of simplifying assumptions.

The restriction of considerations only to social factors is incorrect. Studied phenomena should be presented holistically - systemically. Research conducted according to the quantitative and systems approach school ensure consideration of complexity of studied phenomena and processes in management. Based on the mathematical and quantitative methods typical for this school, one can build models of analyzed problems concerning decision-making and management to study a specific reality usually associated with great complexity and uncertainty.

Nowadays, in constantly changing organizations and turbulent environment there is a need to combine multiple methods and approaches specific to different schools and research perspectives (strategic, organizational and individual). Therefore, the holistic and integrated approach school can be developed [2].

**Economic Evaluation Approaches and Methods**

Presently, complex and unique processes are executed in a variety of organizations: business, public, nonprofit, educational, scientific, military and others. The scope of undertaken activities and objectives of these processes are often very ambitious. Projects and programs (sets of projects) are usually performed under restricted resources that should be used as much as possible. Research carried out in the framework of economic evaluation is used for acquisition and processing of information and knowledge useful in decision-making processes regarding the efficient way of using available resources.

The basic principles of economic evaluation are as follows: concentration on a selected intervention, systematic measurement of costs and project outcomes, combining input costs and output benefits in the final analysis, benchmarking and comparison of alternative resources applications [3]. Due to the fact that both costs and benefits most commonly are not only quantitative (easy to express in monetary units), it increases the importance of multifaceted economic evaluation. Literature highlights the difficulty in adopting economic principles by evaluators from different disciplines and fields [3].

Basic economic evaluation methods are as follows: CMA (Cost-Minimization Analysis), CUA (Cost-Utility Analysis), CEA (Cost-Effectiveness Analysis), CBA (Cost-Benefit Analysis) and MCEA (Multi-Criterial Expert Assessment). The most often used methods are CBA and MCEA. Critical aspect to the formulation of project evaluation is to determine external and internal costs and benefits. In CBA, monetary terms are used to estimate cost and benefits. In order to measure social and environmental value of evaluated projects CUA, EIA (Economic Impact Analysis), SROI (Social Return on Investment) and SCBA (Social Cost Benefit Analysis), were designed.

CEA is a simpler method that can be used when projects total benefits are involved only in one category and it works well in the case where it may be inappropriate to monetize projects outcomes. This analysis supports decision-making in the case of projects involvement of the smallest resources. MCEA is the most universal method but it is characterized by subjectivism resulting from own knowledge and attitudes of experts.
School of Evaluation Combining Research, Teaching, Practice and Consulting

Research, teaching, practice and consulting in the field of evaluation must refer more strongly than ever to the needs arising from new challenges related both to the development of evaluation theory in the field of economic sciences and also to the progress in new ICT technologies. The creation and progress of new evaluation school may result from the need of application, in research, teaching, practice and consulting, interdisciplinary approaches utilizing the capabilities of management thoughts development, studying project management and evaluation fields, progress in social science evaluation methods, access to knowledge engineering as well as AI methods.

The conception of integrated evaluation school, on the one hand, deals with combining research, teaching, practice and consulting. On the other hand, this conception is related to the integration of several aspects (Figure 1).

The general methodological basis for evaluation are several philosophical currents: positivism, constructivism and realism [4]. The positivist approach assumes the ability to obtain valid knowledge about the universe and assessed objects through systematic and orderly research based largely on quantitative scientific methods [5]. The quantitative nature of positivism simplifies the described reality, which makes it problematic to take into account difficult-to-measure and multi-faceted input resources, project processes and their outcomes.

Constructivism allows for taking into account the multifaceted and complexity of the investigated phenomena thanks to the acceptance of many research perspectives and qualitative research. Different viewpoints, attitudes, cultural and psychological determinants and other non-measurable factors should also be taken into account in this approach [4].

In turn, the philosophical realm of realism is related to the discovery of complex and comprehensive socio-economic and environmental mechanisms operating within the framework of policies, strategies, programs and their relationships with evaluated projects [6]. This process of discovering and exploring knowledge about socio-economic and environmental dimensions is compared to unpacking and learning the contents of black boxes, [7] is implemented in opposition to positivist assumptions, does not allow the discovery of generalized and objective knowledge (apart from the observer perceptions) as a result of quantitative research [5].

The philosophical basis for qualitative research related to evaluation can be a matrix of four paradigms: positivism, descriptive interpretation, critical humanism and critical realism [8]. The basis is the paradigm of positivism, and the descriptive interpretations concern the individual and subjective experiences of the researcher as well as methods based on interpersonal interactions. In turn, the perspective of critical humanism functions in opposition to positivism and includes the proposal of specific research methods. In the last perspective, critical realism emphasizes mainly aspects resulting from radical social change, the need to take account of social ontology, which concerns philosophical analysis of the nature of being, the essence of reality and its representation in human and social consciousness [8].
Theory of project management and evaluation is dynamically developed in response to demand from practice. This is a separate field within the management science discipline, which concerns broad interdisciplinary study and is connected with many schools of management thought. Theory and practice of project management and evaluation are developed within higher education scientific institutions, academic centers, professional associations, consultancy firms and individual researchers. Methodological area of project evaluation in most cases is related to traditional social research adopted by including specific characteristics of project environments, stakeholders, sponsors, etc.

Most of classical evaluation approaches typically involves quantitative and fragmentary evaluation of project activities and some estimation of short-term economic and financial outcomes. The most popular approach is based on the knowledge and experience of a group of expert-evaluators, who assess many qualitative, non-monetary and difficult-to-measure criteria in an approximate and subjective manner. In practice, there are often problems with the completion of relevant experts and the availability of knowledge from previous evaluation processes.

Approaches based on AI and new ICT provide the opportunity to save experts' knowledge, reduce the subjectivity of the evaluation process and improve it. It is also useful to study the utility of knowledge systems for project evaluation [9]. This kind of research means reaching into many fields of science to solve the projects evaluation problem on the basis of economic and management sciences. Interdisciplinary approaches and methodological research in the field of integrated evaluation can manifest itself in the search for methods and evaluation systems known in other sciences. Application of interdisciplinary approaches means eg. using methods and systems related to uncertain information processing, artificial intelligence and knowledge engineering.

Summary

Currently in Poland there is a discussion on the possible directions of higher education reforms which are truly necessary [10]. A group of about ten best universities, probably in the future (fall 2018) will be primarily based on scientific research and to some extent related to teaching, business cooperation and consulting. The conception of truly integrated evaluation school of thoughts, proposed in this paper, may be designated one of the potential directions for development of study related to the selected field.

The proposition of integrated evaluation school deals with combining research, teaching, practice and consulting, as well as it is related to the integration of philosophical debates and paradigms, social science evaluation theories, theory of program management, classical evaluation approaches, approaches based on AI and new ICT and interdisciplinary approaches.

Presented considerations can be regarded as one of the voices in the current discussions. Clarification of proposed proposition of school, which is based on holistic vision of scientific research, teaching students, practice and consulting, requires further work and implementation of the process of gathering experiences, progressed by using the method of subsequent approximations.

References


