

On Value-Added Assessment in Higher Education

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Received 12 May 2014; accepted 12 July 2014

Published online 26 September 2014

Abstracts

Value-added assessment, as first appeared in the “Coleman Report”, is an assessment model that takes the extent of students’ progress and growth as the standard, and reflects a “student-centered” quality concept. Value means consistence, correspondence, and proximateness between the existence, attributes and changes of the object on the one hand and the dimensions of the subject on the other hand. From the perspective of the object of higher education services, value-added in higher education is represented by value-added in the serving products of public services - students; from the perspective of the producers of the serving products of higher education, it is represented by the improvement of the systematic functioning of higher education institutions; and from the users of the serving products of higher education, it is represented by the increase of the satisfaction of government, society and family towards higher education. The value-added assessment is directed at the starting point, process and results of higher education, its functions are diagnosis, improvement and supervision, and its footholds are improvement of quality and promotion of fairness.

Key words: Value-added assessment; Higher education; Assessment model

Wang, F. F., & Cui, Y. Q. (2014). On Value-Added Assessment in Higher Education. *Higher Education of Social Science*, 7(2), 37-43. Available from: URL: <http://www.cscanada.net/index.php/hess/article/view/5281>
DOI: <http://dx.doi.org/10.3968/5281>

INTRODUCTION

In 1998, the first World Conference on Higher Education listed quality as one of the important declarations facing higher education in the 21st century; in 2009, the World Conference on Higher Education pointed out that “expanding access poses challenges to the quality of higher education. Quality requires both establishing quality assurance systems and patterns of assessment.” China has built the world’s largest system of higher education, but the quality thereof is far from meeting the needs of the general public for high-quality higher education. At present, Chinese higher education has entered into a new stage of connotative development featured by quality improvement, structure optimization, and reform intensification. “Several Opinions of the Ministry of Education on Overall Improvement of the Quality of Higher Education” (Jiao, 2012, No.4) provides that “quality improvement is the lifeline of higher education”, so quality improvement is a core mission for current development of higher education.

There are mainly two aspects of divergences as to the understanding of the quality of higher education, one is “whose quality”, and the other is “what aspects of quality”. “Whose quality” reflects different appeals of different bodies towards quality. In the eyes of university teachers and principals, quality is the students’ mastering of knowledge and skills, and the all-around development of individual students; in the eyes of governments, the quality of higher education is its performance, the input-output ratio, and whether education can make its due contribution to the development of the country and its competitiveness; and in the eyes of society, the quality of higher education is whether universities can cultivate students into talents adaptable to the needs of the productive forces. In fact, these appeals are choices made by higher education between promoting individual

development and meeting social needs. Such a choice has been time-honored ever since human-orientation contradicted with society-orientation as to the functions and purposes of education, therefore, today it is still a big challenge to attempt to reconcile different bodies to reach a consensus on the quality of education. There are two viewpoints with regard to “what aspects of quality”. One view holds that the quality of higher education is the results and quality generated by activities of higher activity, be it good or bad, is the educational output in juxtaposition with educational input and educational process, and is the goodness or badness of the results of educational activities, while the other view believes that the quality of higher education is the level and degree that should be reached by those elements covering the whole process of educational input, educational conditions and educational output. The former is of the opinion that the latter generalizes the extension of the quality of education, while the latter thinks that the quality of education with emphasis only on the results but not on the process is of little significance to the improvement of the quality of education because we understand only the how, not the why. We have showed more concern to the quality of education after the completion of the task of expanding the scale of higher education, but no breakthrough has been achieved in the dispute over the connotations of the quality of higher education, which has become even more complex. Until today, this dilemma continues to exist, haunting the theory and practice of quality assessment in education.

Scientific assessment is key to quality improvement. There is no scientific management without scientific assessment; and there is no scientific decision-making without scientific assessment (Qiu et al., 2010). The “National Medium-and-Long-Term Program on the Educational Reform and Development Plan” (Article 33) provides that “To improve assessment of education and teaching. To establish scientific and diversified assessment criteria according to the training objectives and talent concept. The method of improving assessment of schools and students is a key lever for the increase of the quality of education. From summative assessment to formative assessment, from standard-based assessment to developmental assessment, the people-oriented trend of thought on education has prompted modern educational assessment model to place more attention to the development of students, the process of education and multi-subject democratic participation. Among a great many of modern assessment theories, value-added assessment with its unique charm has received so much attention from the government, society, families and schools (Ma, 2012, September), that one researcher deemed it to be “by far the most accurate method for school assessment”. (Lesley, 1999) Value-added assessment originated in the “Coleman Report” released in 1966 by Johns Hopkins University, and its core idea is to

monitor and evaluate the degree of impact of the schools on the magnitude of students’ progress. Coleman Report concludes that the material conditions of the school are not the determining factor of the students’ academic achievement, and the role of the school lies in to help students overcome obstacles to academic progress brought about by the inequality in their birth, which has directly initiated the research on a new system of assessment of school performance centered on students’ progress. Such countries and regions as UK, parts of the U.S.A., France and Hong Kong are vigorously promoting value-added assessment, i.e., to evaluate schools’ performance by the magnitude of students’ progress. A. W. Austin, a famous American higher education assessment expert, believes that the main concern of value-added assessment in higher education is the changes occurred to the students from their entering into university to graduation and departure from university, and the quality of higher education is mainly reflected in the quality of the students being taught, and in the degree of its impact on the development of college students’ knowledge, ability and attitude. The more changes in students’ learning and development during college years, the greater the impact of university on students’ development, and the higher the quality of the university (Astin, 1985).

The concept and standard of assessment serve as the wind indicator for development, and value-added assessment reflects the essence of education - to cultivate human and promote their development. This paper will unfold its discussion of the main idea of value-added assessment in higher education from the definition of value, the dimension of value-added in higher education, and the connotation of value-added assessment in higher education.

1. DEFINITION OF VALUE

1.1 Definition of Value in Philosophy

The philosophical term “jiazhi” (value) in Chinese corresponds to “value” in English, “valeur” in French, “wert” in Germany, and “ценность” in Russian. Marx had made some textual research on the etymology of those foreign words, and according to the explanation quoted by him from *Philosophical Etymology*, the word “value” came from ancient Sanskrit “wer”, “wal” (wall, fence, cover up, protection, reinforcement) and Latin “vallum” (embankment), “vallo” (protection with a dike, strengthening, protection), and its meaning has been reinforced as “safeguarding and protecting people”. The original meaning of value is precious, lovely, pleasing and appreciable.¹

Currently, the influential perspectives concerning the nature of value are as follows:

¹ *Karl Marx and Frederick Engels*. (Vol. 26 III, p. 327).

The first is subject definition, which believes that “value is human” or human are “both the designer of value and the value itself” (Han, 1993), and defines the value taking the internal needs and desires of the subject - human as its starting point, and taking psychic gratification and satisfaction of human as limit. This perspective holds the view that value is the attribute vested by the subject to the object voluntarily and consciously subject to his or her own needs, which reflect the attitude of the subject towards the object, but confounds value with the subjective reflection of value.

The second is function definition, which takes value as a particular function of the object, an expression of the function. “The essence of value lies in its effectiveness, rather than its actual factuality.” (Rickert, 1996) This view believes that value is a useful attribute of objective things, thus equating value to the functional attribute of things, and ignoring the decisive role of the attributes of the subject and interbody on the value.

The third is subject-object relationship definition, holding that value is the specific relationship of object attributes to subject needs. Value is not an entity, but a utility relationship of whether the subject-object relationship could meet subject needs, and whether it is to the benefit of the survival and development of subject. “Value” is a subjective description of the subject-object relationship, which represents the nature and degree of the process of subjectification of object, i.e. the nature and degree of consistency, correspondence, and proximateness between the existence, attributes and changes on a regular basis of the object on the one hand and the dimension of the subject on the other hand (Li, 1997). The philosophical definition of value adopted by this paper is the subject-object relationship definition.

1.2 Origin of Value in Physics

According to the second law of thermodynamics, energy always transfers from a high-energy state to a low-energy state, which is measured by entropy, the movement of things always evolves towards chaos, and all things in nature have a natural tendency to increase entropy. The definition of value from the perspective of natural sciences originated from the “power source” that maintains and develops the ordering process of dissipative structures - negative entropy: Only with the constant input of negative entropy flow into the system, could the internally generated increase of entropy be offset. Along with the development of science, people have gradually realized that the ordering process of dissipative structures is not only determined by energy exchange, but also depends on such non-physical forms of ordering energy in the broad sense as material exchange and information exchange. The “ordering energy” further develops into “ordering energy in the broad sense”, and thus gradually evolves into value in the true sense of physics. For certain subjects, the

ordering energy in the broad sense possessed and released by things is value. The concept of ordering energy in broad sense is established on the basis of natural sciences, with its connotation already connected with the connotation of value established on the basis of social sciences. Value derived itself from nature, and develops with the development of the society, with its origin being the moving material world and laboring human society.

1.3 Definition of Value in Economics

In the view of Marxist Political Economy, value is the indiscriminate human labor embodied in a commodity, i.e., the value of commodity, which can be divided into use value and exchange value, with the former defined as the value given to the buyer of the commodity, and the latter defined as the amount exchanged by the use value. What determines the value of a commodity is not the individual labor time but the socially necessary labor time, that is, the amount of labor time performed by a worker of average skill and productivity, working with tools of the average productive potential, to produce a given commodity. The value of a commodity is composed of two parts, one is the new value created by labor consumption of commodity producers, i.e., the living labor, and the other is the old value inherent in the object of labor and means of production transferred by the concrete labor of the producers to the commodity.

2. VALUE-ADDED IN HIGHER EDUCATION

2.1 Value-Added

According to the definitions of value from three disciplines of philosophy, physics and economics, the increase of value, i.e., value-added, is represented by the following three aspects.

2.1.1 More Consistency Between the Existence, Attribute and Change of the Object, and the Dimension of the Subject

According to the philosophical definition of value, value is the nature and degree of the consistency, correspondence, and proximateness between the existence, attributes and changes of the object on the one hand and the dimensions of the subject on the other hand, and the increase of value is the narrowing of the gap between the existence, attributes and changes of the object and the dimensions of the subject, leading to greater proximateness and consistency. Under the usual premise of the existence, attributes and changes of the object being unable to reach the dimensions of the subject, value-added, i.e., to increase the consistency between the two, can be realized by increasing any of the indicators of the object, if the dimensions of the subject remain unchanged; or by decreasing the dimensions of the value of subject, if

the indicators of the object cannot be increased; or by a two-pronged approach of increasing the indicators of the object and decreasing the dimensions of the value of subject simultaneously. All of these three methods can effectively increase the consistency between object and subject, thus realizing the added value.

2.1.2 Increase of the Degree of Functional Ordering

According to the physical definition of value, value is the energy that maintains and develops the ordering process of dissipative structures, therefore, the increase of value reflects the increase of ordering energy, the outcome of which is externally represented by the increase of the degree of functional ordering of dissipative structures. The advantage of the physical definition of value addition lies in that it draws a vivid outline of the substantive characteristics of a system after value-added-more orderly in function, while its disadvantage lies in that with regard to the methods of realizing value addition, it cannot provide any operational recommendation to value addition in the reality of complex systems.

2.1.3 Increase of Socially Necessary Labor Time

According to the definition of value in economics, value is the indiscriminate human labor embodied in a commodity and is determined by the socially necessary labor time. Therefore, the value of a commodity is added due to the increase of its socially necessary labor time, and value addition is represented by the increase of new value created by labor consumption of commodity producers, i.e., the living labor, or more of the old value inherent in the object of labor and means of production being transferred by the concrete labor of the producers to the commodity.

2.2 Connotation of Value Addition in Higher Education

Based on the above origin retrospection in physics of the concept of value addition, analysis of its philosophic meaning, and the inquiry of its forms in economics, the connotation of value addition in higher education can be summarized as follows: from the perspective of the object of higher education services, value addition in higher education is represented by value addition in the serving products of public services-students; from the perspective of the producers of the serving products of higher education, it is represented by the improvement of the functional ordering of higher education institutions; and from the users of the serving products of higher education, it is represented by the increase of the satisfaction of government, society and family towards higher education. Value addition of students is at the individual level, the improvement of functional ordering is at the organizational level, and the increase of satisfaction concerns external accountability.

2.2.1 Value Addition of the Object of Higher Education Services-Students

From the perspective of the economics, the significance for the development of universities rests with the value

of its serving products. The value of higher education is created in production-school production, and realized in circulation-social circulation. From the point of the process, higher education imparts scientific and cutting-edge knowledge to its serving products - college students, create the hard power for its serving products, and increases human capital of college students; from the point of externalization, the cultural environment of higher education institutions provides cultural immersion to their serving products, and creates the soft power for its products; from the point of social extension, higher education provides students with alumni resources, including alumni resources while at school, de facto alumni resources of graduates and possible alumni resources of future graduates, so as to increase the social capital of college students. Therefore, the value addition in higher education lies in the improvement of its serving products' knowledge, enhancement of their skills, elevation of their cultural foundation, as well as accumulation and enrichment of their alumni resources.

2.2.2 Improvement of the Ordering of the Structure and Function of Colleges and Universities: The Producers of the Serving Products of Higher Education

It is known from the physical definition of value addition that then value addition is the improvement of the degree of ordering. Currently, China's higher education has entered into a stage of popularization, so the core work for the present is to promote connotative development of higher education in an all-around way, the strategic support of which is to optimize its structure, to promote the ordering and rational improvement of the structure of higher education, including adjusting the structure of academic disciplines and majors, adjusting the level and type structure for talent cultivation, and adjusting the regional layout and structure of higher education. The value addition of higher education reflects the value addition of the producers of serving products of higher education - the colleges and universities themselves, and is specifically demonstrated by the improvement of the degree of ordering in structure and function, as well as the mutualistic symbiosis of all elements.

2.2.3 Increase of Satisfaction From Government, Society and Families: The Users of the Serving Products of Higher Education

From the philosophical definition of value addition, we know that value addition refers to the close relationship between the existence, attributes and changes of object and the dimensions of the subject. The 18th NCCPC proposed to develop "education to the satisfaction of the people", so value addition in higher education requires the status, attributes and changes of the object of higher education to be in line with the value dimension of the subject-people, namely to improve satisfaction. The functions of universities are talent cultivation, scientific

research, social services and cultural inheritance and innovation, just as Marx said:

In all forms of society there is one specific kind of production which predominates over the rest, whose relations thus assign rank and influence to the others. It is a general illumination which bathes all the other colors and modifies their particularity. It is a particular ether which determines the specific gravity of every being which has materialized within it.²

Among these four major functions of higher education, the “general illumination” and “a particular ether” means talent cultivation, so what kind of people are to be cultivated and how to cultivate are the fundamental function and task for universities. Therefore, the core to develop higher education to the satisfaction of the people lies in increasing the quality of talent cultivation, so that the users of the serving products of higher education - government, society and families are more satisfied with the talent.

3. FEATURES OF VALUE-ADDED ASSESSMENT IN HIGHER EDUCATION

3.1 Direction: Starting Point, Process, and Outcome

In the process of developing higher education, the concept of quality in China's higher education has been gradually understood, during which period people from different perspectives and with different choices in the value of higher education have formed different views with regard to the quality of higher education and have come up with all kinds of quality concepts for higher education. First is the knowledge-oriented quality concept under the perspective of pedagogy, which means that the university is the place where universal knowledge is preserved and imparted with the aim of spreading the eternal truths to the students, so higher education shall cultivate knowledgeable talent. Second are the individual-based quality concept and society-based quality concept under the perspective of sociology, which means that higher education shall satisfy those needs for people's living and their own development. Third is the adaptation-oriented quality concept and development-oriented quality concept under the perspective of economics, which means that the quality and quantity of students cultivated by institutions of higher learning shall fit the requirements for human resources in the labor markets. Fourth is the product-oriented and process-oriented quality concept for higher education under the perspective of management, which takes colleges and universities as factories of education, in which the education products of colleges and universities are college students, and the quality of higher education is the quality of cultivation of college students.

In view of the quality concepts of higher education mentioned above, “quality of higher education” is a dynamic concept of multi-dimension and multi-level, with the following connotations: first, quality as excellence, taking “excellence” as the highest standard, which usually refers to the difficulty and complexity of the discipline, the seriousness for students' testing procedures, etc.; second, “quality” as “fitness for purposes”, which means achieving the standards fixed by the authorities for certification or quality assurance, with emphasis on the outcome and efficiency of colleges and universities in realizing the established goals or purposes; third, quality as “relevance”, which means the relevance of the overall objective of the university or its business objectives in teaching or academic research, rather than the examination of the relevance of the process per se according to the external objective or requirement; fourth, quality as “responsiveness”, which means the responsiveness of the overall objective of the university or its business objectives in teaching or academic research to the demands of labor markets; fifth, quality as “improvement or enhancement”, which pays attention to continuous pursuit of improvement and enhancement, and emphasizes that universities shall take full advantage of their autonomy (and academic freedom of universities) to achieve the quality standard of their core mission.

In reality, among all types of quality assessment indicators for higher education, some indicators regard such observation points as school buildings and hardware equipment as starting point for talent cultivation, which is based on a premise of false assumption, i.e., the allocation of resources and inputs determine the quality of talent cultivation; some other assessment indicators such as achievements in scientific research, famous teachers, school prestige, outstanding alumni and other observation points are regarded as output, as assessment of the outcome and efficiency of higher education, the former of which is a kind of result, while the latter of which is the proportion of input to output, and an efficiency assessment taking the realization of objectives as a basic precondition. It is necessary for the assessment indicators mentioned above to put emphasis on educational input and output during a certain period and to certain degree, however, the process of cultivating people is more important and more urgent, otherwise it will lead to the situation of emphasizing scientific research while neglecting teaching, and emphasizing input while neglecting cultivation. Value-added assessment is directed at the outcome of cultivation, focusing on the impact of higher education on the degree of progress made by the talent being cultivated. The progress made by a person is progressive, and the value addition to the serving products of higher education is a step-by-step process with spiraling escalation, therefore, what value-added assessment directs at is the starting point and outcome of higher education, as well as the difference or the extent of progress achieved between

² *Karl Marx and Frederick Engels* (Vol. 46, p.44). Central compilation & Translation Bureau. Beijing: People's Publishing House.

the outcome and the starting point, i.e., the formation process of value addition.

3.2 Function: Diagnosis, Improvement and Accountability

The functions of value-added assessment model, which pays equal attention to the starting point, end point and process of talent cultivation, are not for identification and appraisal, but for diagnosis, improvement and assessment of the results and feedbacks before directly serving the progress of the students themselves, serving the increase of teaching quality, serving the improvement of structures within the colleges and universities, serving the decision-making for government administration, and serving the public accountability and supervision from the society. The increase of teaching quality contributes to value addition of the object of public service of education - students, the improvement of structures within the colleges and universities means the improvement of functional ordering of the educational system for higher learning, and public accountability from the society is represented by the satisfaction of the society and people toward education.

Another prominent feature of value-added assessment is that it can better meet the requirements of educational accountability. In the worldwide wave of educational reform, strengthening educational accountability has become a common trend. Among the guiding principles proposed in the Strategic Plan of U.S. Department of Education (2002-2007) and the No Child Left Behind Act of 2001, the most important is the establishment of an accountability system, which requires government at all levels and schools to be accountable for the academic achievement of students, and not to attribute the academic failure of students to the students themselves. The previously commonly used method is target-oriented accountability, taking pre-determined objectives as standards within a prescribed time period. It wasn't before long when trouble came: Target-oriented accountability has been unfavorable for those schools with poor source of students, and led to competition for high-quality students and discrimination against poor students, which was not conducive to promoting educational fairness.

The functions of value-added assessment rest in diagnosis, improvement and accountability, in whether it is conducive to the quality of talent cultivation, to the benefit of students, to the progress and development of students, to the maximum release of students' potential, to the effective play and improvement of students' subjectivity, to the satisfaction of society with regard to higher education, and to the more harmonious and orderly development of higher education system.

3.3 Foothold: Improvement of Quality and Promotion of Fairness

It is the lifeline for higher education to improve quality, and it is an urgent demand for higher education to

promote fairness. Value-added assessment in higher education concerns the efficiency of institutions of higher education in talent cultivation, so taking higher education's role in the growth and improvement of students to evaluate the quality of higher education captures the essence and fundamental task of cultivating people, and giving play to the functions of diagnosis, improvement and supervision is conducive to the sustainable and healthy development of the quality of higher education. Meanwhile, when taking as the basis of assessment the value addition in higher education, i.e., higher education's contribution to students' progress, without interference of such factors as the quality of the source of students and material conditions, analyzing the actual outcome of the work of universities and taking full consideration of the different levels of students when entering the university can break the formerly vicious circle of "high-score students—good learning foundation—better test results—more government allocation" resulted from waterfall selection of top students in college recruitment, improve the situation where Chinese higher education institutions blindly pursue such input factors in cultivation of talents as discipline construction and funding. The ranking of colleges and universities may play the role of stimulant in the short term, but undoubtedly being fond of ranking is not conducive to concentration on the cultivation of people, and may lead to homogeneity among colleges and universities. Therefore, the idea of value-added assessment can essentially improve the quality of cultivation by higher education institutions, promote educational fairness, direct universities to shift from emphasizing input to efficiency, from source of students to cultivation, from pure focus on results to the whole process of education.

Fairness and quality in education, just as the fairness and quality in economic development, are often placed in a "either this or that" situation. Since the 1980s, the trend of strengthening the integration of the two has become more and more obvious, and improving the quality of education and promoting educational fairness have currently become a common goal of all countries in developing higher education. Guarantee of fairness and pursuit of quality are two dimensions in developing education, both of which are indispensable, and fair education must be education of high quality, where every student has equal opportunity in enjoying high-quality educational resources.

There are many types of indicators for the assessment of the quality of colleges and universities, any single evidence, be it the ranking list of colleges and universities, research on degree of satisfaction, or performance study, will be questioned for their imperfection in philosophy or technique. Value-added assessment in higher education explores the most fundamental and original intention—effective cultivation of students' talent and maximum release of their potential, which reflects the "student-

centered” quality concept of higher education. It is both a new indicator or technique taking the extent of students’ progress and growth as its mark, and furthermore a project containing an evidence culture and a culture of concern and love.

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