CIEA 2008

Evaluation of Education:

Overview of Principles,

Trends and Expieriences

Dr. Janet Cádiz

Académico e Investigador de Facultad
de Educación Pontificia Universidad Católica de Chile

Friday, 15 August 2008

**26th International Course on vocational Training
and Education in Agriculture**

ciea

Evaluation of Education:
Overview of principles, trends and experiences

What is evaluation and what is not evaluation?[1]

The term 'evaluation' is very widely used. Wondering about the quality of what is on offer is common in a wide variety of human activities, both at an individual and organisational level. It is obviously necessary to know how worthwhile and useful the processes and products being implemented are, at both macro and micro levels, in order to be in a position to modify or optimise the activity that is being carried out. To this end, large quantities of varied information must be gathered, to support any decisions taken. An 'evaluation' is naturally the first thing that springs to mind when considering the issues above. Thus, for example, in education the quality of services offered by the education system is constantly being evaluated and specific evaluation mechanisms and tools are developed to provide evidence as to the quality of the service that society is receiving.

The term 'evaluation' is therefore initially associated with the process of gathering information to assist decision-making. Nevertheless, this and other approaches to understand evaluation's true meaning diminish its real implications and complexity. The tendency is to define it through some of its processes, which are most visible when something or someone is being evaluated.

At an educational level, the situation described tends to repeat itself. It is not unusual to meet, for example, teachers who define evaluation as simply a judgement, measurement, qualification or grade, a way of obtaining information, a test or exam, or an investigation.

Based on the above and to answer the initial question (What is evaluation?), evaluation can be defined as the process of determining the value of something or someone. It implies assigning a value to the something or someone that is being evaluated. The American Evaluation Association (AEA, 2006) defines evaluation as assessing the strengths and weaknesses of programmes, policies, personnel, products and organisations to improve their effectiveness.

---

[1] Ove (2003) "…evaluation as the collection of information, the presentation of criteria for judging the information, and the selection of a winner or best performer. An alternative way is to look at evaluation as a process, a platform for reflection, learning, and the development of new perspectives on a problem or issue" (p.6).

What is educational evaluation?

In general, the term 'educational evaluation' is initially seen as being directly related to the "stage of the education process that has the aim of testing, in a systematic manner, to what extent the pre-stated objectives have been achieved. Education is a systematic process that intends to achieve lasting and positive changes in the conduct of the subjects being educated, based on objectives defined in a concrete, precise, social and individually acceptable manner." (Laforucade, pg. 3, in Molnar 2000). Educational evaluation can also be seen as a process that aims to celebrate the achievements or results of the learning process (knowledge, skills, abilities and attitudes) attained by the students through different educational experiences and, on this basis, to inform decisions taken by teachers (CIEA, 2003). Basically, these two definitions focus on the subject that does the learning and is the product of a formal education process.

However, the concept of educational evaluation must be wider than this in scope as it relates to a variety of educational processes and products. Therefore, the term evaluation as applied to the field of education relates to the assessment, comparison and judgement process regarding the quality of the work of a student or school or the quality with which a specific educational programme functions (CRESST Glossary: Pg.1, 2008).

Lastly, it can be argued that educational evaluation is a systematic, rigorous, permanent, participative and contextualised process of information-gathering to judge and analyse the quality of the processes and results that are developed and implemented with regard to students, teachers, schools and educational institutions, and which contributes to supporting, understanding, maintaining and improving the educational services on offer (Cádiz, 2008).

What are the paradigms that support evaluation assumptions? What is the relationship between these paradigms and learning assessment?

In order to understand the various conceptions of the term evaluation, from the most restrictive to the widest in scope, it is necessary to analyse the paradigms from which they have sprung. Below is a table in which the various paradigms are set out:

Positivist - Quantitative Paradigm:	Constructivist-Interpretive-Qualitative Paradigm:	Critical Theory-Post-modern-Paradigm	Eclectic-Mixed Methods-Pragmatic Paradigm
• Evaluation is quantitative in nature. • Results are explained in terms of their cause-effect relationship. • More associated with the idea of evaluation as measurement. • Concerns the evaluation of outcomes. • External evaluation. • Uses quantitative standards and indicators to compare and substantiate the quality of results.	• Evaluation is qualitative in nature. • Concerns the perceptions and values of the participants in the evaluation. • Various interpretations are explored to understand that which is being evaluated. • Participative evaluation. • Use of qualitative categories to assess performance	• Evaluation goes further than mere quantitative or qualitative criteria. • It is based on a critical reflection regarding that which is being evaluated. • Evaluation is carried out to produce far-reaching changes in that which is being evaluated. • Critical and contextualised evaluation. • Use of theory and reflection to turn evaluation into a new kind of practice.	• Evaluation is based on responding to a more and more complex and technology-based society. • Aims to evaluate practical rather than theoretical problems. • Requires more varied procedures and evaluation tools. • Concerns the specific and integral evaluation of inputs, processes, outcomes and impacts. • Internal and external evaluation. • Use of quantitative and qualitative criteria.

(Drawn up by Cádiz, 2008)

The evaluation of learning has been influenced by the dominant paradigms, as can be seen in the following table:

Evaluation within the conducive paradigm	Evaluation in the cognitive paradigm
• Evaluation of outcomes rather than learning processes. • Evaluation through objectives expressed in terms of desired behaviour. • External evaluation. • Highlights the importance of feedback. • Quantification of behaviours. • Attention focuses on cognitive and motor skill-related behaviours. • Evaluation of behaviours and the opportunity for responses. • Specification of indicators. • Assessment of changes in the student resulting from education.	• Teaching subordinated to learning. • Leadership fluctuates between teacher and students. • Diversification of the teacher's intervention, assessment, coordination and facilitation roles with regard to students' learning. • Critically-based focus on assessment, the qualitative analysis of processes, its intermediate stages, and outputs, with an educational, learning-related objective.

What are the key evaluation questions?

On the other hand, to be able to design and implement a process of evaluation in the educational field it is necessary to consider some of the following questions:

a. Who is evaluating? (Who?):

Depending on those carrying out the evaluation, it may be **internal.** This is an evaluation that is initiated and carried out by the staff of a centre, an educational programme etc. There are three main types of internal evaluation:

Self evaluation	Heteroevaluation	Co-evaluation
• Evaluators evaluate their own work (a student his/her progress, a centre or programme its own functioning, etc.). • The person carrying out the evaluation is also the person being evaluated.	• Different people to those being evaluated evaluate an activity, object or product.	• A set of subjects or groups mutually evaluate each other (students and teachers, different teams of teachers, the management team and the School Board)

Depending on those carrying out the evaluation, it may be **external.**

- This is the case when an educational establishment or programme is evaluated by people that are not part of it.

- It is often the case when there are 'expert evaluations'.

- These evaluators may be assessment inspectors, members of the administration, researchers, school support teams etc.

b. What is evaluated in education? (What?)

Education System	Institutions	Programmes or Projects
Subcomponents: • Preschool • Elementary • Junior • Senior	Subcomponents of the institution: • Administrative • Financial • Academic	Elements or aspects of which it is made up: • Objectives • Activities • Resources • Stages and timetable etc.
Teaching and learning process	**Objectives of a course**	**More**
Steps of which it is composed: • Objectives • Activities • Methodological resources • Student learning • Evaluation	• Field • Procedures • Attitudes	• Performance evaluation • Skill evaluation

c. When should evaluation be carried out in education? (When?)

Initial evaluation	Evaluation of the process	Final evaluation
Focuses on determining the initial state of something or someone.	Focuses on evaluating the progress or development of something or someone.	Focuses on evaluating the final outcome or result of something or someone with regard to a specific task, skill or piece of knowledge.

**d. What functions does evaluation fulfil in education?
(What are the evaluation functions?)**

Diagnostic Evaluation	Formative evaluation	Cumulative evaluation
• Enables the initial conditions and possibilities of something or someone to be determined • Contributes to relevant decisions being taken to make education more effective and avoid inadequate procedures. • Enables the real situation of students undergoing education to be identified, compared to the reality envisaged in the objectives and the requirements or conditions necessary to achieve them. • Applied at the beginning of the educational process, whether this is a curriculum, a course or part of one of the above.	• Can be applied to the evaluation of processes. • Should be incorporated as an integral part of the teaching-learning process. • Aims to improve the evaluated process. • Enables measures that will have an instant impact to be taken.	• Applies to the evaluation of finished outcomes or results. • Takes place at the end of a process, when it is considered finished. • Aims to determine to what extent the objectives set have been achieved and provide the assessed result with a positive or negative evaluation. • Enables medium and long-term measures to be taken.

e. Which are the best evaluation criteria?

Standards	Skills
• These are the clear objectives with regard to which it is hoped that all students will show the desired level of performance at the end of their schooling. • Standards are very clear specifications on the kind of knowledge that students must acquire and more particularly, what they must be able to do with this knowledge.	• These are an individual's aptitude to carry out the same productive role in different contexts and based on the productive sector's expected quality requirements (Conocer, 1997). • Each skill is therefore understood as the integration of three kinds of knowledge: conceptual (knowledge), procedural (knowing how to do) and attitude-related (being). These are integrated forms of learning that comprise reflection on a student's own learning process (metacognition) (Pinto, 1999). • This category currently also includes social skills.

To evaluate skills, at least three aspects must be borne in mind:

- Skills-based evaluation implies evaluating a student with regard to performance / evidence, which means that evaluation tools need to be able to gather the evidence of this performance.

- The skills-based evaluation process must compare the student's actual current performance with pre-established performance criteria.

- The skills-based evaluation must take account of all facets of learning, i.e. a student's knowledge, attitudes and abilities, in order to assess the achievement of a skill.

f. For what reason do we need to develop evaluation processes or studies at the educational level?

- To inform public opinion on the quality of education and generate a culture of evaluation.

- To promote the effective responsibility of all stakeholders in educational processes, including students.

- To provide information for applied research on the impact of social and school-related variables on learning and the most effective kinds of interventions.

- To guarantee equality of educational opportunities.

- To identify failings in the results of the education system.

- To contribute to establishing and monitoring high educational standards.

- To assess the impact of specific policies, innovations or programmes.

- To carry out cost-benefit analyses that guide decisions on resource distribution.

- To influence the education, training and performance of teachers.

- To provide feedback on the curriculum and study plans.

- To analyse school improvement plans.

- To certify the skills of students at national and international levels.

- To provide parents with information on the education that their children are receiving.

- To provide students with information on their performances and academic achievements.

- To certify the quality of educational institutions.

Trends in educational evaluation

Various trends have emerged at international and national levels with regard to the use and implementation of educational evaluation. These range from trends that limit evaluation to a means of controlling the proper use of resources to those that see it as a way of providing feedback to the system, taking account of the opinions of the various stakeholders in education. Some of these trends are presented below:

a. At the student level:

Trends towards the evaluation of various life and job-related skills rather than knowledge of content alone. There are some requirements to support this evaluation trend:

Basic knowledge and skills for the 21st century	Abilities for personal and professional life	Learning and innovation-related skills	Skills in handling information, media and ICT
• Knowledge of 21st century issues. • Economic, financial and enterprise-related literacy. • Citizenship skills. • Basic health-related knowledge.	• Flexibility and adaptability. • Initiative and self-management. • Social and cross-cultural skills. • Productivity and trustworthiness. • Leadership and responsibility.	• Creative and innovative skills. • Critical thinking and problem-solving skills. • Communication and cooperation skills.	• Information handling skills. • Media literacy. • ICT skills.

This requires a change in teaching strategies and therefore in evaluation strategies, to reflect the dynamic nature of knowledge as well as students' active participation in a society that is increasingly technologically developed.
The need to evaluate performance and student achievement.

b. **At the teacher level: Trends to evaluate pedagogical and disciplinary competencies for teaching.**

Teaching Preparation	Creation of a favorable learning environment	Teaching for all the students	Professional responsibilities
• The principles and necessary pedagogical competencies required to organise the process of teaching • Students and context are also important.	• The existence of a stimulating environment implies teachers' deep commitment to the learning process and individual characteristics of students.	• The primary mission of teachers is to generate learning opportunities for all their students.	• To guarantee a high-quality education for all students. • To participate in educational projects and educational reforms.

Evaluating the quality of teachers implies using: self-evaluation, peer-evaluation and external evaluation through portfolios, professional conversations, evidence of student achievement, content knowledge/pedagogy tests.

c. **At the school and system levels the trends are:**

• To evaluate school quality and equity at the managerial, environmental and pedagogical levels.

• To evaluate the educational system for accountability purposes.

• To evaluate the educational system for equity purposes.

• To evaluate the educational system for democratic purposes by taking into account different stakeholders who request evaluation studies for improved decision-making.

Educational evaluation: The Chilean Experiences

Chile's system of evaluation covers the evaluation of students, teachers and schools. All of this is useful in assessing the quality of education in Chile. Evaluation is the responsibility of the Ministry of Education. It is responsible for the following systems:

- SIMCE (a system to assess the quality of education): The achievement of students in primary (4th and 8th years) and secondary (2nd year) education has been being evaluated since the 1980s. Students are evaluated with regard to the current curriculum in the areas of Language, Maths and Sciences (natural and social). The various assessments carried out until now continue to reveal that differences persist between students who attend state schools and those who attend subsidised and private schools. There is no evaluation of the achievements and performance of students in technical education.

- DoncenteMás (a system to assess the performance of teachers):

    a. Evaluates education professionals that work as classroom teachers in state schools.

    b. It is a training-based process that aims to improve the educational work of teachers and promote their continuing professional development.

    c. Each teacher is evaluated every 4 years, unless they obtain an 'unsatisfactory' final performance level, in which case they must be reassessed the following year (Source: MINEDUC *[Ministry of Education]*

    http://www.docentemas.cl/bienvenida.php). It is important to point out that the performance of primary and secondary teachers is evaluated, while there is as yet no evaluation of teachers in technical education.

- SNED (the National System to assess the performance of schools): This aims to help improve the quality of the education provided by the state-funded education system by incentivising and recognising education professionals in those establishments that demonstrate the best performance levels (Source: MINEDUC, http://w3app.mineduc.cl/appSned/ Public/index.jsp)

- International testing: Chile has also participated in international evaluations such as TIMSS and PISA.

Some conclusions

- Evaluation is not an end in itself; it is a means to improve education.

- Evaluation needs to provide reliable and useful evidence for decision-making. This implies considering for what and by whom the information will be used.

- Educational improvement becomes possible when there is a series of activities coordinated over time. It is important to provide follow-up, through a perspective of continual improvement, to the way in which students and educational institutions develop.

- Evaluation is not an activity reserved for a small group of experts: it is a cooperative activity that involves the various stakeholders in the education process.

- Evaluation must comprise not only knowledge but also skills, attitudes and values that influence achievement, both academic and outside the classroom context. It must be based on EVIDENCE.

- There must be a close link between the kind of evaluation used and the type of learning that is being evaluated.

Basic References

Ahumada, P (2001). La evaluación una concepción de aprendizaje significativo. [Evaluation as a significant learning-related idea] Valparaíso: Ediciones Universitarias Valparaíso

Castillo, M (2003). La evaluación: una estrategia a nivel internacional para el mejoramiento de la calidad educativa. [Evaluation: an international-level strategy to improve the quality of education] EDUTEKA: 14 February 2004
http://www.sedbogota.edu.co

CRESST (2008) National center for research on evaluation, standards and information studies: The electronic Glossary
http://www.cse.ucla.edu/products/glossary.htm

EDUTEKA (2007). 21st Century Student Outcomes. Published by el Consorcio de Habilidades Indispensables para el Siglo XXI.
http://www.21stcenturyskills.org.

Gutiérrez, O (2004) Tendencias en la evaluación de los aprendizajes. [Trends in the evaluation of learning] Revista de Teoría y Didáctica de las Ciencias Sociales. Mérida-Venezuela. ISSN 1316-9505. January-December. Nº 9, pp. 111-130.

Ove, K. (2003). Evaluation Politics in Europe: Trends and Tendencies. I Studies in Educational Policy and Educational Philosophy: E-tidskrift, 2003:1.
<http://www.upi.artisan.se>.

Mora A. (2004). La evaluación educativa: concepto, períodos y modelos. [Educational evaluation: concept, phases and models] Revista Electrónica "Actualidades Investigativas en Educación". Volume 4, Number 2.
http://iimec.ucr.ac.cr/~revista/index1.htm

MINEDUC website (2008) Ministry of Education. http://www.mineduc.cl/

Janet Sylvia Cádiz Henríquez

Academic and Researcher at the Faculty of Education,
Pontificia Universidad Católica de Chile
Av. Vicuña Mackenna 4860, Macul
Casilla 306. Correo 22 – Santiago
Tel: (56-2) 354 5347
Email: jcadiz@uc.cl - jcadiz@puc.cl

Doctor Cádiz is a specialist in research, evaluation and assessment methodology. She currently teaches on graduate and postgraduate courses and supervises theses at the Faculty of Education at the Pontificia Universidad Católica de Chile.

Dr. Cádiz has also carried out consultancy and research in the evaluation of learning, teachers' performance evaluation, institutional evaluation, creating assessment tools, the evaluation of standards and skills for initial teacher training and working as a teacher, and research on the application of hierarchical analysis to the educational field for governmental and non-governmental institutions.

With regard to methodological research, Dr. Cádiz has an interest in systemising and designing procedures used in research and evaluation projects, in order for them to comply with the rigorous scientific criteria necessary to ensure their success and subsequent effective use.

2001	Ph.D in Education. Research Methodology, Evaluation and Measurement. University of California, Los Angeles, UCLA,.
1996	Degree in Educational Sciences, specialising in Evaluation Faculty of Education, Pontificia Universidad Católica de Chile,.
2004-2008	Head of Postgraduate Studies, Faculty of Education, Pontificia Universidad Católica de Chile,.
2004-2008	Postgraduate Tutor in Curriculum and Evaluation. Faculty of Education, Pontificia Universidad Católica de Chile,.
2005-2006	Part of the Central MECESUP [Programme to improve the quality and equity of higher education] Team for Undergraduate Studies, for the development and evaluation of professional skills. Faculty of Education, Pontificia Universidad Católica de Chile,.

Publications and participation in recent events

Cádiz, J (2007) Overview of Educational Evaluation. Presented at the inaugural opening. Report presented and published at the Latinamerican CIEA Seminar, 25 Sept – 5 Oct, El Quisco, Quinta Región.
http://www.codesser.cl/

Cádiz, J. y Martinic, S (2007). Variables affecting academic effectiveness in contexts of poverty: The P900 case in Chile. Paper presented and published at the 1st Iberoamerican Congress on Academic Effectiveness and Associated Factors. 12, 13, 14 December, Santiago de Chile.

Manzi, J; Araya, C; González, R; Barros, E; Bravo, D; Peirano, C; Cádiz, J and Torres, D (2007). Validity Evidence for the Certification of Teaching Excellence in Chile: A Pioneer Experience in Latin America. Paper presented and published at AERA Annual Meeting, April 9 – 13, Chicago, Illinois.

Cádiz (2006). Reanalyzing fourth grade math student achievement in Chile: applying Hierarchical Linear Models (HLMs). Revista ELectrónica de Investigación y EValuación Educativa [online educational research and evaluation review] v. 12, n. 1.
http://www.uv.es/RELIEVE/v11n2/RELIEVEv12n1_2.htm.

Cádiz, Nuñez and Soto (2006). What are the criteria for being a good teacher according to Pedagogy of General Basic Education students in their final year of professional training. International Congress on Learning Styles, Universidad de Concepción.

Cádiz (2005). Evaluation of Learning. Day of Dialogue on the issues regarding national, international and classroom assessment. MINEDUC Curriculum and Evaluation Unit and the Committee of Deans of Education. Santiago, Chile, 10-11 January.

Cádiz (2004). Scientific rigour and guiding principles for an evaluators /researchers. ARS Médica: Review of Humanistic Medical Studies. Pontificia Universidad Católica de Chile. N°9.

Cádiz (2004). General rules for the presentation and discussion of thesis projects. In general teacher training support materials, Pontificia Universidad Católica de Chile.
http://www.uc.cl/webpuc/html/frames/frdocencia.html .

Cádiz (2004). Learning evaluation support aimed at assistants in the School of Engineering. In the Engineering Students' Centre of the Pontificia Universidad Católica de Chile.
http://www.caiuc.cl/cgi-bin/formato.cgi?idp=cai2004documentos.

Cádiz (2004). The ways in which the evaluator needs to resolve issues related to the type of stakeholder and the political context: an experience with a government agency. Paper presented at the annual meeting of the American Evaluation Association: Atlanta, Georgia, USA.