THE QUALITY FUNCTION DEPLOYMENT AND THE CUSTOMER SATISFACTION. THE CASE OF UNIVERSITIES

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Abstract

This research aims at applying the Quality Function Deployment methodology to a university course in accounting. The final objective is to make more competitive university programs by applying a quality methodology able to define the real customer needs.
In particular, in this paper, the QFD allows us to assess the learning needs of students in an accounting course and translate them into educational strategies (specific techniques) able to satisfy such needs.
In conclusion, we evaluated the effectiveness of the didactic strategies adopted by professors of the accounting course, in perspective of the customer (students) training needs. The results allow us to define "the right things to do for the first time", a significant support for the improvement of university courses.

Keywords: Quality Function Deployment, customer satisfaction, higher education, accounting

Introdution

The sweeping changes that companies experience also impose profound changes to universities. In a fragile and complex economic environment universities must provide a stimulus to competitiveness and employment. In this sense, the quality of the training provided by the universities becomes an essential factor to meet the expectations of its stakeholders (Sargiacomo,1999).

Precisely, education provided by universities must consider the expectations (needs) of employers (Eryilmazb, 2011) in their respective sectors.

It is therefore necessary that the objectives of the course be defined in relation to the final expectations of customers (employer), but it is equally necessary that these objectives be achieved. Students are "the raw material to be transformed into an outstanding finished product ".

We must start, therefore, from a careful assessment of the qualitative characteristics of these "raw materials" in order to define how to "turn them into the finished product".

In conclusion it is necessary to assess customer needs: student (training needs) so that the final customer (the employer) is in fact satisfied. In this sense, the educational strategies adopted by professors in their course represent a critical determining factor for the satisfaction of those needs. This present paper focuses precisely on this last aspect and tries to apply QFD to a university accounting course in order to assess which educational strategies are more effective in the satisfaction of the educational needs of students.

The Quality Function Deployment (Akao and Mizuno, 1978) represents a quality methodology which highlights the needs of the customer (Griffin, Hauser, 1993) in order to avoid overlooking key aspects of the expected quality in the design process. The QFD contributes in translating customer requirements in the final product or service features

(Sahney et al., 2004). In addition, this method allows to "do the right things"[39]. Ultimately, a design that takes into account the needs of the customer and limits error probability, and then, its subsequent corrective actions.

In this paper we attempted to apply the QFD to an accounting university course in order to clearly define the needs of the customer (student) by transferring them to the educational process.

In this sense we can:

- "Provide a service" that actually meets customer needs - student education (doing things right);
- improve the instructional design process by "doing the right things right" (efficiency improvement in the educational processes);
- improve the quality of training provided, in terms of customer satisfaction.

The Quality Function Deployment focuses on "houses of quality", a matrix consisting of different area components or "rooms," each one adapted to a function, in which an appropriate number of necessary information converge to develop a new product design. In conclusion it is a graphical conceptual approach able to disclose customer needs by translating them into technical specifications.

In this work the house of quality, has allowed us to relate to customer requirements with education strategies (specific techniques) necessary to achieve a quality course.

Precisely defining the educational strategies that meet a specific target means to establish how an organization intends to meet certain requirements.

For universities the satisfaction of its external customer' needs - employers (Madu, CN, CH Kuei, D. Winokur, 1994) must be translated in the training of students with knowledge, skills and abilities defined on the basis of the external customer expectations and on the basis of needs (training needs) of the internal customer - the student (Kanji, GK, Tambi AMA, W. Wallace, 1999).

In this sense, the QFD is the ideal tool for identifying customer (student) needs translating them into instructional strategies that will meet these requirements. QFD is a methodology of quality, able to provide competitive advantages to university offers.

The Deming cycle (Deming, 1989) represents a further opportunity when applied to the continuous improvement of a course in its development (Plan, Do, Check, Act). In regard to this the TEM model (Teaching Evaluation Model)[40] was presented, it is a variation of the Deming cycle to university education - planning (Plan), implementation (C), evaluation / self-evaluation (Check) and improvement (Act) of a course in accounting.

The QFD and the Deming cycle used jointly, fully represent the concept of quality in terms of "doing the right things right the first time."

Ultimately, the QFD allows to identify "the right thing to do" (customer needs) translating them into educational strategies that meet those needs, the Deming cycle allows to

[39] "La capacità di fare le cose giuste, cioè quelle che possono portare a un'alta performance sostenibile, dipendono da cultura e conoscenze […] Ma anche la capacità di fare le cose bene viene potenziata da un modo di pensare sistemico (systems thinking) che massimizzi la sinergia nelle relazioni umane". Cfr. T.Conti, *Qualità un'occasione perduta? Guida provocatoria per imprenditori, manager e amminstratori che mirano all'eccellenza*, Etas, Milano, 2004, p.12.

[40] For a deeper understanding on this matter: Verna I., *Il ciclo di Deming nella didattica universitaria Il Teaching Evaluation Model (TEM)*, Aracne Editrice, Roma, 2012; Verna I., Perozzi D., Quality in knoledge sharing in an university course, in *Proceedings of the International Conference on Quality in Higher Education*, December 12-14, 2013, Sakarya, Turkey; Verna I., Lucianetti L., Continuous improvement in the university teaching: the TEM model, *European Scientific Journal*, ESJ Feb 2014, Special Edition, Vol 1; Verna I, Perozzi D., *Applying the TEM Model (Taching Evaluation Model) in an academic course in accounting: a comparison across five years*, Paper accettato "1st Mediterranean Interdisciplinary Forum on Social Sciences and Humanities, MISF 2014, Beirut, Lebanon.

"do them right" through a continuous improvement (PDCA) of the didactical processes in progress.

The proposed work/paper focuses on the study of QFD methodology in a university course in accounting. The purpose is, as already noted, the evaluation of the most effective educational strategies to meet the educational needs of the learner.

The results of this work both represent a completion of previous studies, precisely aimed at the study of possibility of applying quality methods to improve the university offers (TEM) and an aid to teachers in order to make more efficient and effective their courses.

For this purpose, the paper has been divided into four parts. The reference literature was initially introduced literature, the QFD methodology then was presented in order to examine its later application to an accounting university course. Finally the results obtained were discussed along with the possibility of further developing the proposed work.

Theorical background and supporting literature

Definitions and classifications of the concept of quality (Juran, 1997 p.XII) which outlined the contours more or less clear have alternated in time (and space): a philosophy that revolutionizes companies in values and in organizational and managerial traditions, a mere "technique" to use to solve ongoing problems of a standard to be met to enter or remain in "trade certificates".

The quality, of course, provides opportunity of investigation wider than those just mentioned. The present work is meant to emphasize the "theory and practice" that allowed the quality of acquiring and retaining the principles and methods that make it even a competitive strategy.

In particular, we want to emphasize aspects such as "[...] the generation of value, the judicious use of resources and balanced satisfaction of the expectations of stakeholders. It is from here and not from the formal observance of minimum requisites, that must start to address the changes, to ensure that experience becomes culture "(Conti, 2004).

It is from this consideration of the concept of quality (Total Quality Management) - as a philosophy of business management as a source of competitive advantage for companies - that we started to test the opportunities arising from application of some methodologies of quality to university education.

In literature there are several studies showing the benefits and the results produced by a number of universities that have adopted the principles of quality (Ermer and Kniper, 1998; Lim and Tang, 2000; Howel 2000 Hwarng and Teo, 2001).

Although it is difficult to give a clear definition of quality in the field of higher education (Marshall, 1998 and Michael, 1998), we can say that “Total quality management in education is multifaced. It includes within its ambit the quality of inputs in the form of students, faculty, support staff infrastructure; the quality of processes in the form of the learning and teaching activity; and the quality of outputs in the form of the enlightened students that move out of the system” (Sahney, Banwet and Karunes, 2002, p.3)[41]

In particular during this working papers we attempted to examine the contribution of the quality to university education. Ultimately the quality was considered in terms of teaching effectiveness compared to students’ learning (Shoulders and Hicks, 2008), ie the ability to achieve consistent and effective learning processes, essential skills (Ramsden, 1998; Stephenson, 1992; Peelo , Wareham, 2002 N.Entwistle, H.Tait, 1990) - definitely the ability to respond to the needs of "customers" - learners (Angelo and KP Cross, 1993).

[41] Taken from: Qureshi M.I., Khan K., Bhatti M.N., Khan A. and Zaman K., 2012, Quality Function Deployment in Higher Education Institutes of pakistan, *Middle-East Journal of Scientific Research,* 12(8): 1 111-1118.

The quality of the educational processes is the result of a constant effort of the teacher in the analysis of the educational processes carried out, in their improvement starting from "the listening" of the learners - their skills, ability and learning motivation - and consolidates in the experience gained in the continuous search for a simple and effective classroom assessment model (TA Angelo and KPCross, 1993).

The constant and attentive listening of the needs "of the customer" is a critical process for the satisfaction of the same, and the professional growth of the teacher.

The international orientation "sees" an ever-closer relationship between teaching effectiveness and the overall didactic quality of the courses and faculties (Pearlman, Tannenbaum, 2003).

Australian universities in particular, show a great deal of attention to the issue of teaching evaluation, as attention to learners and their learning, and to their full satisfaction, coincides with the concept of evaluation.

The attention on learning generated in learners, hence the quality of the teaching is in the foreground even in the Asian, the U.S. and Canadian context.

In particular, innovation in teaching and learning processes are promoted and incentives and award procedures are used.

An almost similar situation for Europe (Britain in particular) that puts the emphasis on the dissemination of those successful practices (good practices) in teaching in order to increase the quality level of the educational offers in universities.

It is certainly complex to measure educational services due to their intangible nature and because they represent the translation of an individual in his knowledge, in his characteristics and his behaviour (Michael, 1998). But without measurements it is very difficult to achieve the improvement.

The QFD has been successfully applied in the field of education (Koksal and Egitman, 1998; Lam and Zhao, 1998), particularly in the design of curriculum and the improvement of teaching methods (Ermer, 1995; Lam and Zhao, 1997; Owlia and Aspinwall, 1998; Aytac and Deniz, 2005; Hamza, 2011).

The main problem is the definition of the customer. Actually there is no agreement on the definition of customer in educational institutions. Some universities consider their customer both the student and the employer (Spanbauer, 1987). Others consider student only as a reference (Coate, 1990).

The student is undoubtedly the main customer of an educational institution (Jaraiedy and Ritz, 1994). A real difficulty, however, is recognized in considering customers as students who do not have the knowledge able to influence the content of a course. Additionally, a "satisfied customer" does not coincide with a high quality of education considering that whereas the achievement of an educational qualification is a result of short-term and long-term - effective learning and growth (Singh and Ashok Grover, 2008) .

That said, one must consider that it is possible to investigate customer needs indirectly through an initial test, handed out to the learners at the beginning of the course. The test aims at assessing: prior knowledge and skills of the student.

At this point the teacher will have a set of information that thanks to his skills, will be organized into a hierarchy of needs to satisfy in relation to the course objectives (as defined in consideration of career opportunities-needs of the employer). Once defined the needs to satisfy we used to define the teaching strategies the most appropriate to meet those needs.

The QFD allows us to achieve this goal thanks to the quality of the house in which it is possible to relate the needs of the customer "WHOT", with the most appropriate teaching strategies "how."

The results will represent for the teacher a clear and precise design of the course as a whole defined on the effective needs of the customer in relation to the objectives to be pursued.

As noted by some authors (K.Samuelovicz, J.Bain, 1992; K.Trigwell, et al., 1994) the effort of the research must be directed at "informing" especially those who teach on the feasible prospects and possibilities of teaching. QFD allows to act in this direction.

The application of QFD to university education also represents the development of previous studies that see the Deming Cycle, applied to educational processes (TEM - Teaching Evaluation Model) as protagonist of the continuous improvement of a course in accounting.

In particular, the TEM model (Verna and Lucianetti, 2014) fits into a consolidated context of studies of northern European tradition (N.Entwistle, P.Ramsden, 1983; F.Marton, R.Salio, 1976), taken up by Australians researchers (M.Prosser, P.Ramsden, K.Trigwell, E.Martin, 2003) which considers teaching and learning closely related (K. Trigwell, E.Martin, 2003).

The TEM model is conceived as a personal proposal of "methodological tool" of the teacher (but acceptable and comparable between different subjects), useful for the purpose of reflection, research and improvement of the educational activity undertaken and to be undertaken (Verna, Perozzi, 2014) .

The TEM model is based on the concept of complexity of the quality of teaching, so the need for a multidimensional approach to teaching (RJCasey, P.Gentile, SWBigger, 1997; L.Roche, HWMarsh, 2000): a systemic approach .

The model begins with the skills, experiences and representations that each single teacher has of the educational/didactic action (P.Ramsden, 1992; K.Samuelowicz, J.Bain, 1992; K.Trigwell, 1994; L.Gow, D.Kember, 1996;) linked to the context of time and place in which this is achieved.

It is on this basis that it develops a process of improving of the educational activity aimed at a constant reflection and analysis of the processes carried out and the results produced (learning), on the causes of the problems identified and the improvements achievable by the same teacher, in relation to its environment (P.Ramsden, 1992).

The QFD provides the ability to initially define (start of the course) the needs of the customer (doing things right the first time) and to specify for each need the instructional strategies that are best suited to carry them out. One can easily imagine how the benefits offered by the QFD combined with those of the Deming cycle represent a real competitive advantage for the quality of university education.

The Quality Function Deployment (QFD) in a university course of accounting.

The Quality Function Deployment was invented in 1972 when two engineers Nishimura and Takayanagi implemented a quality chart to a shipyard in Japan (Jnanesh and Hebbar, 2008).

QFD is a methodology characterized by a series of processes aimed at translating the customer's demand into design targets.

These processes must define the quality of the final product, of components and individual elements of the production process (Akao and Mizuno, 1978).

The QFD begins with "the voice of the customer" on which the design is based.

Designing a product/service on customer needs means reducing time and cost associated with a wrong design, ultimately it is "doing things right the first time." Moreover, the quality of the product/service is improved by a design realized in function of the implied and attractive needs to the customer.

In short, the QFD allows to reduce the gap between "quality promised" and "quality supplied" (Eureka and Ryan, 1989).

The basic steps of QFD can be summarized as: definition of the customer, what the customer wants (needs) and how those needs are meant to be met (Pitman et al., 1996).

The house of quality is the tool on which the QFD is based and is a graphically summarizing customer expectations, technical specifications, objectives and priorities, in a "map" of reference (for the company) in order to attain the expected values.

The QFD, as noted above, can also be applied successfully in the field of education. In this study we intend to use the QFD methodology in order to make university education more effective and efficient. Ultimately, we want to identify and meet the learning needs of the learners so that the quality of the "training offered" coincides with the one "promised."

Particularly, the course in accounting has been defined by considering the expectations of "employers" (external customer).

The question that has been placed subsequently was the following: what teaching strategies must be applied to ensure that the internal customer (student) will achieve the objectives of the course? Only one student effectively trained fully meets his needs and those of all other stakeholders.

For this purpose it has been attempted to use assess the QFD to identify the training needs of the student to whom match the most appropriate instructional strategies that meet those needs.

Customer needs

The first aspect to consider in the application of QFD is to precisely determine the customer's expectations. Universities play an increasingly important role with respect to the communities in which they operate. They represent a stimulus for competitiveness, economic growth and employment (Hugles and Kitson, 2012). Ultimately, the relationship between a country's competitiveness and the quality of the educational system of the country is very strong (Borahan & Ziaraty, 2002).

It is therefore crucial to achieve a quality education focused on the learner. As noted above, the learner doesn't have the skills to define its own learning needs. The teacher on the other hand has those skills.

In this sense, the students' needs were identified through the administering of a test (to a class of 80 students) aimed at verifying their pre-knowledge and skills at the beginning of the course in accounting.

This course is designed to provide knowledge and skills on aspects that can be summarized as: the structure and functioning of the accounting system and international practice; accounting recognition of the main operation of management; general principles and the fundamental aspects of the financial statements.

In respect to the issues just mentioned, teachers administered to students at the beginning of the course, a test (objective) consisting of 20 items (multiple choice, true / false, links and completions), and given a score 0 - 1 (for each item: wrong or right, respectively). The aim was to test the knowledge and skills possessed by the learners.

For example, compared to a specific goal of the course, focused on the knowledge of the concept of capital, the level of knowledge possessed by the learner is examined on two levels: "basic knowledge", "Advanced knowledge".

The "basic knowledge" is assessed against the following objectives (examples):

- The learner is able to define the concept of capital;
- The learner recognizes the different components of capital;

In reference instead to the "advanced knowledge":

- The learner is able to distinguish / determine the different configurations of the capital.

The test results allow teachers to determine the level of knowledge possessed by students (basic or advanced), and then the homogeneity / heterogeneity of the classroom. At this point the teachers in accounting have all the essential information to define a scale of needs and assign relative weights (importance of the need).

In particular, as already noted, this information have been classified by the teachers into two categories: knowledge and skills. The latter were further divided into "basic" and "advanced".

In particular, the scores given to each item made it possible to highlight the main training students' needs who have been assessed by teachers on a reference scale - from 1 to 10. It has been defined in this way, a hierarchy of needs (customer Importance ratings) that occurs as shown in the table No. 3.

It should be noted that in the house of quality "the room of the needs of the customer" includes the main topics of the course (assessed in the test in terms of learning objectives) classified as just described.Referring to this latters the professors have given a weight correspondence that expresses the importance of the need in terms of "lack of training of the classroom": 0 null, 10 maximum.

Once defined the learning learners needs, the next step is to evaluate the most effective instructional strategies to satisfy those needs.

Educational strategies

After having defined Customer expectations (Whats), it is necessary, therefore, to determine which educational strategies (Hows) are more efficient in reaching these needs.

In particular, an heterogeneous class of students will require educational strategies tailored to the diversity emerged in students. The objective is to provide an instructional design that can effectively and efficiently reach the objectives of the course.

Educational strategies consist of a combination of teaching methods used in a span of two hours (single lesson). The choice of the most appropriate strategy is closely linked to the educational objectives pursued in relation to which it emerges a specific training need of the learners.

The educational strategies shown in the Table No.1 are the more ones used by a professor of accounting, during a five-year course in which he applied the TEM model - Deming cycle (Verna, Perozzi, 2014) for the continuous improvement of university teaching. These strategies have also been the object of discussion and debate among teachers of the same subject.

Table No. 1 - Educational Strategies

Strategies	**Methods**
Strategy 1	Class / tutorial (explain, demonstrate, perform)
Strategy 2	Role playing/ tutorial/lclass (demonstration - stimulus, perform, discuss, explain)
Strategy 3	Case / class (perform, discuss, explain)
Strategy 4	Project work / class (perform, discuss, explain)
Strategy 5	class/ self-study/questionnaire (or closed case) (demonstration, perform, discuss, explain)
Strategy 6	class/questionnaire/class(or closed case) (explain, perform, discuss, summarize)

The Strategy 1 is the classical method of conducting a lesson. As shown in Table No.1, this strategy provides an initial introduction of the topic to be addressed (articulated in explanation and practical demonstration) followed by a tutorial (which in the course of accounting often results in a financial accounting survey) carried out by students themselves. At the end of each educational intervention regardless of the strategy adopted it is always envisaged a brief summary, but important (reinforcement) of the argument presented. This type of strategy is particularly effective with respect to learning objectives related to both the knowledge of concepts and procedures and the ability to use them in "operational expertise". 1 The strategy is also presented as a slow, analytical and facilitative progression of topics, particularly suited to a classroom of students neophytes "non-experts".

The strategy 2. In this case, the lesson is presented with a role playing (Capranico, 1997; Bushing, 2004), which introduces (stage presentation) the information necessary to carry out the next tutorial. The information can also be introduced without role playing. Role playing is not used in the traditional way "learning by doing, imitating, etc.." But it is used to draw the attention and motivation of the learner in addition to ability to find / select the relevant information independently. At the end of the exercise the teacher discusses with students the results achieved by them, summarizing and synthesizing the issues deled with the lesson. The time devoted to discussion and understanding in this case is greater. Although the objectives reached with this strategy are the same as previously seen, the strategy 2 (inductive) is more suitable for students who already have (or have reached) certain knowledge and skills.

The strategy 3 combine the two classical methods: lecture and case. The case is particularly suitable for the learning of intellectual skills (problem solving), the lesson is imperative to clarify doubts, gaps and discuss the issues raised in the case, and then reinforce learning. The main advantages for students lie the practical application of their knowledge, a high involvement and a greater learning and "memory" of what executed. The third strategy involves the use of closed cases in which there is a right answer (or two or three) in order to prove the "technical process" to be used for a certain type of problem. In the course of accounting used as a reference, given the high number of students, the case is carried out by students individually or at most in pairs. Compared to this strategy it counts as already observed for the previous year (strategy 2) as is in terms of the objectives and the type of students to whom it is addressed.

The strategy 4 is particularly useful when the course is at an advanced stage or the professor have a classroom particularly trained. The strategy 4 offers the advantages of the active methods (discussed above) and allows the learner to develop, strengthen and expand the ability to use concepts and techniques already acquired (Baldassarre S. 2003) in addition to the advantages offered by the interactions in a group work. Also in this case objectives and students to whom it is mainly addressed are the same as in the previous strategy.

The strategy 5 consists of a brief introduction of the teacher on the outline of the subject of the lesson (15/20 minutes) followed by a moment of self-study on synthetic and clear hand-outs allowing the student to learn and reinforce what the teacher introduced and to test their learning in the following questionnaire. Self-study in the course of accounting has been used for a time not exceeding 30 minutes. The remaining time was used to carry out the questionnaire (20 minutes) and the discussion in the classroom. The strategy 5 is particularly effective for knowledge objectives and students classes with less expertise and especially facilitates the learning of complex issues as it allows to deal with the same topic with different approaches: listening, study, self-evaluation and comparison.

The strategy 6 is a classical one, particularly effective for the transmission and examination of knowledge and overfill any gaps identified. Even in this case students not

particularly experienced are the favourite recipients of this teaching strategy equally effective even for "classes more experienced."

At this point, the correlation matrix, allows us to evaluate the best strategy suited to each need expressed by the student - with respect to the course objectives addressed in the initial test.

Correlation Matrix: customer expectations and educational strategies

The correlation matrix, as shown in Table No. 3 (the central part of the house of quality) shows how the educational strategies identified (technical requirements) meet the customer expectations.

The relationship between customer expectations and educational strategies are defined as: (+) strong relation, (-) medium relation; weak relation (x) and the respective weights are: 5, 3.1.

These relationships are defined by the professor of the course and are presented in Table 2 below.

Table No. 2 Relations between the learning needs of learners and educational strategies

Relationships:	
5 – Strong relation	+
3 – Medium relation	-
1 – Weak relation	X

Table No. 3: The House of Quality Matrix

	Educational strategies / **Needs**	**Customer importance Ratings**	**Strategy 1**	**Strategy 2**	**Strategy 3**	**Strategy 4**	**Strategy 5**	**Strategy 6**
			class/ tutorial	Role playing / tutorial / class	Study Case / class	Project work / class	class/ self-study Questionnaire (or closed case)	class/ questionnaire/class (or closed case)
Knowledge	General accounting (objectives tools e methods) BASIC	3	x	+			x	x
	ADVANCED	6	-	x			x	+
	National and Iternational accounting principles (conceptual framework, classification and analysis) BASIC	7	-				-	+
	ADVANCED	9	-				-	+
	Capital (definition, composition) BASIC	4	x	+			x	x
	(configuration/determination) ADVANCED	9	+	x			+	+

	Income (definizionition, composition) BASIC	5	-	-			x	+
	Configuration, determination) ADVANCED	9	+	x			-	+
	Budget (notions, discipline, characteristics) BASIC	7	+				-	+
	Advanced	10	+				-	+
Skills	Recognition of the main management operations (domestic and international markets) BASIC	7	+	x				x
	ADVANCED	10	+					x
	Budget (composition., determination) BASIC	8	+		-	-		x
	ADVANCED	10	+	-	-	-		x
Weights of educational strategies			**388**	**111**	**54**	**54**	**186**	**352**

Results

Initially the house of quality shows the learning needs of students, measured with the objectives of a course in accounting. Professors have classified these needs into two groups: knowledge and skills, which in turn were divided into "basic" and "advanced".

The assignment of a weight to each need has been carried out in order to detect the "training deficiencies" of the classroom on which act upon (0 – null, 10 - maximum).

In view of these requirements, professors have established the relationships with the educational strategies (strong, medium, weak). The results are shown in Table 3. In particular, with respect to the above classification it is possible to make some considerations.

It is possible to detect a fact rather obvious in referring to the objectives related to the transfer of knowledge (basic or advanced), and then to the training needs linked to them. The strategy 6 is the most effective.

As noted above, this strategy allows the professor to explain and demonstrate a specific topic, followed by the opportunity to reinforce the learning with the verification (questionnaire) carried by the learners. This strategy is particularly effective - as well as the strategy 1, in classes that highlight training needs rather high.

In the case under consideration, the classroom appears homogeneous in training deficiencies (very stressed) and this justifies a strong relationship with traditional strategies such as the 6 and 1.

For the same reasons, the strategy 2 has, on the whole, a relation quite weak with the needs of the learners. It is more suitable a strategy of this kind, as already noted, for students with grounded knowledge. In fact, the deficiencies less marked manifested in the classroom have resulted in a stronger relationship with this strategy compared to the needs: l, 5 and 7 (respectively: general accounting, capital, income),. In this way, different training needs find specific strategic response. The purpose is to provide an instructional design able to

effectively respond to the various needs that have emerged. Ultimately it makes visible a need and we define precisely how to satisfy it.

The strategy 5 shows a stronger relation with the learning needs more pronounced (and with more complex topics). In the course of the accounting the strategy 5 allowed to reach excellent results just with its specific use.

In terms of the objectives related to the acquisition of skills, training deficiencies related to them, both "basic" and "advanced" are maximum (7-10). Again, the main requirement is to making reference to classical strategies in which the teacher plays the main role: explanation and demonstration of the contents and guide for the learner in the application and verification of its skills.

In this case, however, it is possible to note how the strategies 3 and 4 that previously have not showed no relation with the needs of the learners (knowledge), are especially present in relation to those training needs linked to specific skills (budget).

Particularly, the strategy 4, has represented, in the course of accounting, the possibility of applying over time gradually and with the comparison between students (as well as with the teacher) skills difficult to acquire with other strategies.

The educational design resulted from the application of the QFD in the course of accounting was crucial to its effectiveness. In particular, the strategies identified in the matrix (Table 3) were included in the design of the individual modules and of the specific lessons parts the course.

The strategies were then applied in the course following the PDCA methodology (TEM model) which allowed us to evaluate the actual effectiveness of these strategies and the conditions for a possible improvement.

Conclusion

To define with attention costumer needs means effectively to understand the expectations, implicit and explicit, and define processes to meet those needs. Which tailor would realize a dress without be worried of taking "the measures of his client"?

To evaluate the effectiveness of educational strategies in terms of needs satisfaction of the learners represents a strategic opportunity for every teacher. Ultimately, it offers the possibility of creating "a dress custom-made".

The definition of educational strategies described above represents an opportunity for professors to design their own course always keeping in mind the gap between "promised quality" and "quality offered".

The educational design that comes from the application of the QFD to a university course is a clear and precise guide for the teacher who sees the excellent learning as the result of a process driven by the quality.

It should be observed that these results can be completed and valued using (as already noted) to another method of quality: the Deming cycle. The TEM model, mentioned above, allows to apply to a university course the PDCA methodology to plan, implement, evaluate and constantly improve during the course, the level of learning achieved by students, and ultimately customer satisfaction.

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