



Analysing the World of Work's Requirements With the Aim of Enthusing Companies About Cooperative Education

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This essay suggests some methods to measure the companies' satisfaction with the education institution they collaborate with and to find out how these institutions may enthruse their employers to maintain this critical partnership. A brief contrast will be made between the South African model of cooperative education (as practiced by universities of technology/polytechnics) and that of the German Berufsakademien. The framework outlined will be the basis of a future comparative study measuring the satisfaction and enthusiasm companies demonstrate in the different educational contexts in which the cooperative education model is applied. Customer satisfaction, with the employer company that is offering the student an experiential (work-based learning) opportunity being the customer, is an important consideration in this education model. (*Asia-Pacific Journal of Cooperative Education*, 2004, 5(1), 1-6).

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Cooperative education may be seen as the close cooperation between both higher education institutions and the world of work. The participation of industry (in the form of companies) is key to the success of the cooperative education model.

In South Africa the cooperative education model is practiced at Technikons, which are being renamed to Universities of Technology or being merged with Universities to form comprehensive institutions, which will then offer both traditional university-type and technikon-type programmes. Technikons may be likened to the polytechnics of other parts of the world and offer career-focussed education. The model followed is one where the Technikon does selection of students into the various programmes. Students are then subsequently placed into suitable and approved experiential working (work-based learning) situations within companies.

This is in stark contrast to the German Berufsakademie (BA) model. BAs call themselves Universities of Cooperative Education. They too practice cooperative education, but in this case, the company selects the students (who are essentially then employees) and places them into

the BA to follow a specific work-integrated learning programme. It should be noted that the BAs specify the minimum entry criteria to the various programmes. The articles by Göhringer (2002) and by De Lange (2002) published in the *Asia Pacific Journal of Cooperative Education* provide an informative and more detailed background to both the BA and the Technikon educational setting.

Whichever model is in place, companies are involved. These companies need to be retained. Without them, this education model is inoperable. Ideally, companies would be enthusiastic participants in the cooperative (co-op) education model. It is thus logical, that if higher education institutions know what might enthruse their companies then they can strive not only to deliver such a service, but also to improve on it. For purpose of this essay we shall call these institutions Cooperative Education Universities (CEUs).

In order to determine these 'enthruse' requirements some research was necessary. An outline for such research – the method and procedure – is presented here. The idea was to develop the model in this essay to lay the groundwork for a comparative study to be done on whether

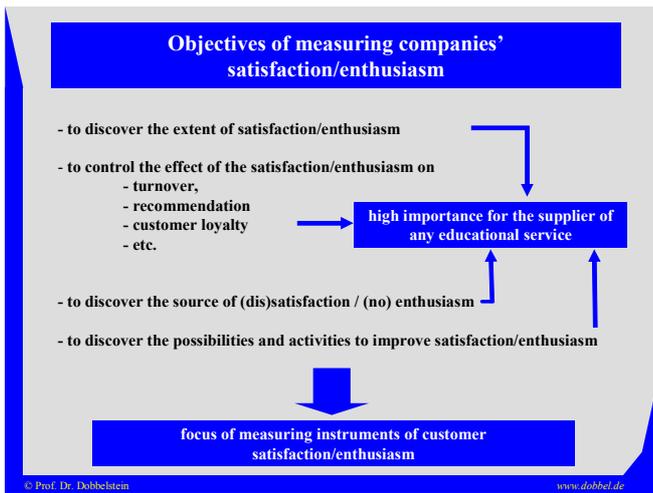


Figure 1
Objectives of measuring companies' satisfaction/enthusiasm (Dobbelstein, 2003)

there are differences in these 'enthusiasm' requirements between companies placing students at a BA in Germany (specifically the BA-Ravensburg) and those companies taking on students from a Technikon in South Africa (specifically the Technikon Witwatersrand). In essence, what is presented in this essay is thus a description of a model that may be used to evaluate employer's perception of the quality of the cooperative education of the institution their students are placed at.

Moreover, there are an increasing number of higher education institutions, all wanting to draw potentially the best students. Firstly, there is the competition between the classical (traditional) universities and the CEUs. Secondly, companies have a choice of institution to select their student pool from or where they wish to train their student employees. This means that there is the competition between the CEUs themselves. Therefore, CEUs have to think about their competitive advantage both as CEUs and as individual establishments.

However, the employers define competitive advantages. The university or kind of university, which is able to fulfil the companies' requirements in the best way, will get the most students. With stiff competition, it is not enough just to fulfil the requirements, because nearly any university will do so. It is thus important to do more, that is to make the companies feel enthusiastic about the way CEUs train their students: in short, to exceed their expectations. This analysis of the companies' requirements must be embedded into the process of improving the services of the CEU in comparison to the services of the other universities.

This essay mainly looks at the analysis of the companies' requirements. In the first step, the method specifications are discussed; which requirements the methods to analyze satisfaction and enthusiasm have to fulfil. Next, a description is given as to how satisfaction may be generated. Because the companies' requirements are very important for creating satisfaction and enthusiasm, these are then analysed. An instrument of measuring satisfaction is presented and finally the question is asked about how

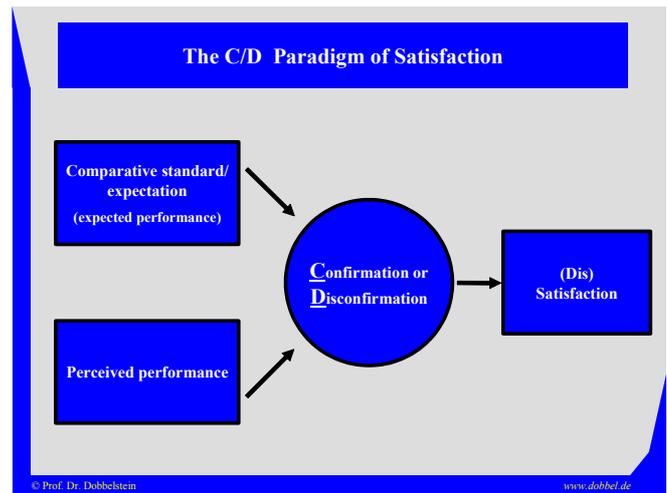


Figure 2
The C/D Paradigm of satisfaction (Dobbelstein & Schuckel, 2001)

enthusiasm can be created and measured.

Methods to Analyse Satisfaction and Enthusiasm

If a CEU intends to measure the satisfaction and/or enthusiasm of the companies it cooperates with, the first thing the CEU will have to do is to think about the objectives of this measurement in detail. It has to ask what the reasons for measuring satisfaction are. This is important because the objectives determine the requirements, which the measuring instruments have to fulfil. Figure 1 gives an overview of possible objectives.

As far as the competition is concerned, the most important objective is to discover the possibilities and activities to improve employer satisfaction, as seen in Figure 1: to improve the satisfaction of the companies and to raise their enthusiasm. To do so, the CEU needs knowledge about the reasons for dissatisfaction and low or no enthusiasm. Any instrument to measure satisfaction and enthusiasm should fulfil these requirements. Before presenting an instrument to measure satisfaction, understanding should be reached and analysis should be made of how satisfaction is created.

Creation of Satisfaction

Generally speaking, satisfaction is the result of a comparison between the companies' expectation and the CEU's perceived performance. Looking at the extremes there are two possibilities. Either the perceived performance fulfils the requirement, that is confirmation, or it does not fulfil the requirement, that is disconfirmation. In the case of confirmation the company will be satisfied; in the case of disconfirmation it will not be satisfied (Figure 2).

Of course, satisfaction is not a dichotomised variable. The perceived performance might fulfil the requirement somewhat, but not completely. An instrument for measuring satisfaction should be able to differentiate between certain levels of satisfaction. The model shows that

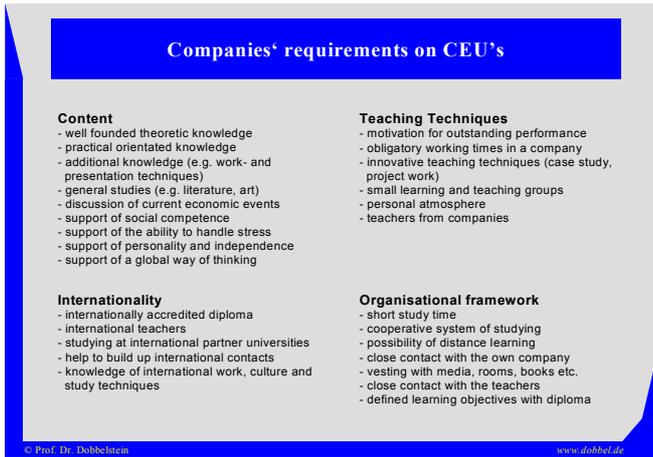


Figure 3
Results of a pre-test about requirements of companies on CEU's (Dobbelstein, 2003)

it is not the objective performance that influences the satisfaction. That means the objective service of a CEU is not the most important factor. It is more important how the service is experienced/perceived by the companies (Woodruf, Cadotte & Jenkins, 1983).

One educational service, for example a three-year study period, may be perceived in two different ways by two different companies and lead to a differing level of satisfaction – even if the companies had the same expectations. The expectation (as well as the perception) can be influenced by many factors, for example by the companies' individual needs, by a company's own experience of the past, by other companies' experiences and, of course, by the CEU's own marketing instruments (Dobbelstein & Behrendt, in press).

Analyzing the Companies' Requirements

As far as satisfaction and enthusiasm are the result of a comparison between the requirements and the perceived performance it is also necessary to find out what the requirements of the companies are. Sometimes the companies themselves do not know what they require from the CEUs.

Normally they are able to enumerate the requirements that they are not satisfied with, but not the ones that are performed well. There are a lot of more or less effective and expensive ways to find out about the companies' current and future requirements, for example, psychoanalytical interviews, job or task analyses.

In order to prepare the intended international empirical research a first explorative pretest was done at the University of Cooperative Education (UCE) in Ravensburg. To find out about the aspects, which should be included in the questionnaire, the technique of brainstorming and group discussion were used.

The participants of this process were about 30 experts from cooperating companies. The requirements, which are included in a pre-test questionnaire, are shown in Figure 3.

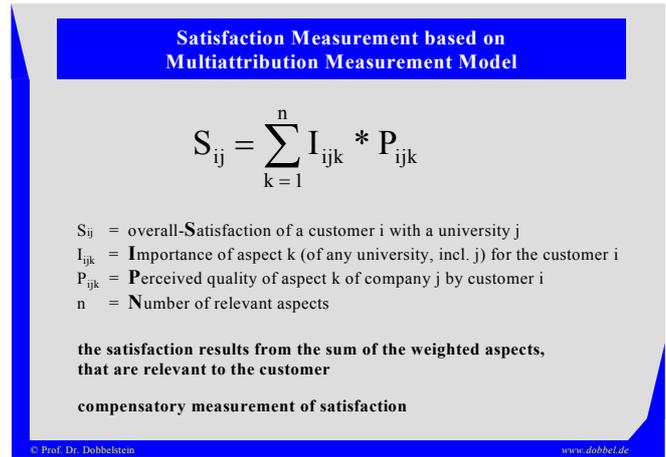


Figure 4
Adequacy Importance Model to measure satisfaction (Dobbelstein, 2003)

Measurement of Satisfaction

Deduced from the S-O-R theory the importance measures the cognitive element of an attitude or of the satisfaction and the perceived quality measures the emotional element. As Figure 4 shows, the overall satisfaction with for example an CEU results from the sum of the weighted aspects that are relevant to the company and influence a company's opinion. The use of the Adequacy Importance Model is explained with the help of an example in Figure 5. It gives an example of the scales that may be used and of a concrete measurement and calculation of the overall satisfaction of three companies. In the example company A is most satisfied with the performance of the evaluated university.

Using this instrument means that you have to think about and enumerate all aspects that might have a certain influence on the satisfaction. To find out about this, interviews and various other techniques mentioned may be used. All detected requirements that are regarded as important by the market researcher (see Figure 3) have to be included in the questionnaire. As shown in Figure 5, there has to be one question concerning the satisfaction and one concerning the importance of each requirement. For each requirement, the value of the satisfaction is multiplied by the value of the importance. After that, all the products of satisfaction and importance are added up. The result is an overall-satisfaction score for a company with a CEU. The Adequacy Importance Model measures the satisfaction in a compensatory way, that is, a low product value for one requirement (company A, aspect 2) can be compensated by a high product value for another requirement (company A, aspect international study). This indicates that a CEU will not be totally lost if it performs poorly in one requirement as long as there are other good ones. The overall-satisfaction scores can be compared between different groups of companies. Questions as follows may be asked: Are there groups of companies which are more satisfied with the CEU's service than others, for example are the companies from the car producing industry more satisfied than retailers, are big companies more satisfied than small ones? The

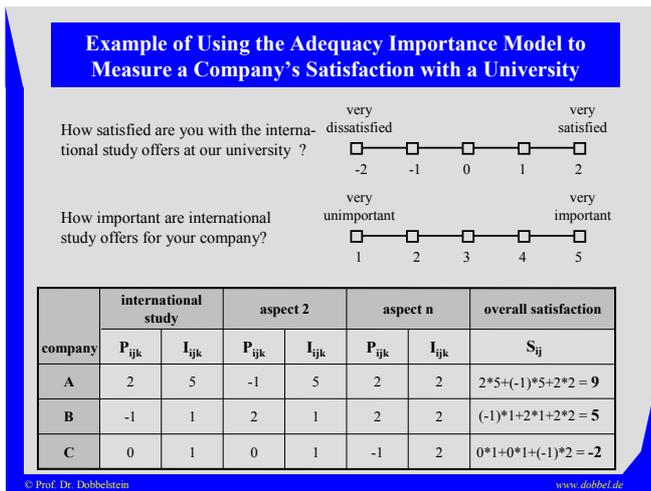


Figure 5
 Example of the Adequacy Importance Model (Dobbelstein, 2003)

scores between different universities can also be compared, for example is the companies' satisfaction with the classic universities lower or higher than the satisfaction with the CEUs?

In a second step, the Adequacy Importance Model gives detailed hints of how to improve the overall satisfaction. To do so, importance and satisfaction have to be analyzed separately for each requirement (see Figure 6). The requirements that are placed in the quadrants 1 and 2 have very low importance values - in the example of Figure 5, being less than three. Therefore, the fulfilment of these requirements does not influence the overall satisfaction very much. If a university fulfils such a requirement very well, it might think about reducing it in order to save costs (quadrant 1).

If an aspect with a low importance value gets a bad satisfaction score for such a requirement (quadrant 2) it might think about its improvement, but there is no a high urgency to do this. Because of the costs of satisfying the companies, the ideal satisfaction score for such requirements might be somewhere in the middle.

All requirements with a high importance have a strong influence on the overall-satisfaction score. For the requirements with a high importance and a high satisfaction there is no change needed (quadrant 3). The university can maintain the same level of performance. However, as Figure 6 shows, if there is only low satisfaction with such a requirement (quadrant 4) the university should improve it as soon as possible in order not to lose any companies. One conclusion of the Adequacy Importance Model is that all requirements with a low importance score do not influence the overall satisfaction very much and - because of that - can more or less be neglected. However, that is a superficial conclusion that might be dangerous. As the following model shows, there may be requirements which do not create much satisfaction, but which are necessary to avoid dissatisfaction and which support other requirements to create satisfaction or even enthusiasm.

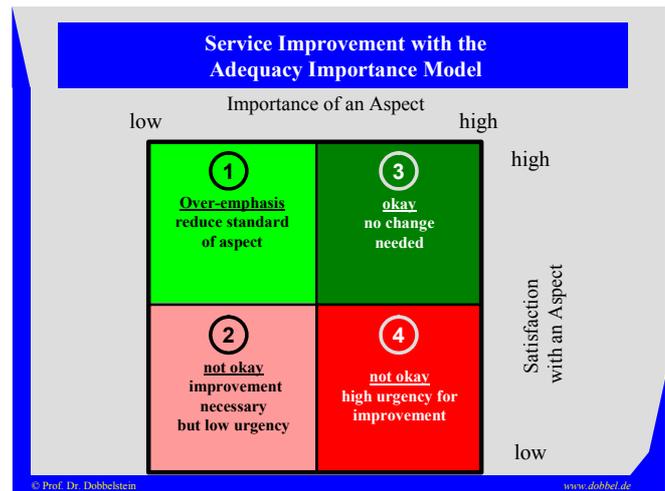


Figure 6
 Conclusions from the Adequacy Importance Model (Dobbelstein, 2001)

Measurement and Creation of Enthusiasm

In order not to draw any wrong conclusions about the companies' satisfaction and the performance in certain requirements, a more detailed look at the relationship between the fulfilment of a requirement and a company's satisfaction is necessary. The Kano model in Figure 7 shows three different kinds of relationship (Dobbelstein & Schuckel (2001).

According to the extent to which the fulfilment of a requirement leads to satisfaction, the model distinguishes between basic, performance and enthusiasm requirements.

Basic requirements are not stated; they are obvious and self-evident. With the fulfilment of a basic requirement, a CEU can avoid dissatisfying a company but it cannot create satisfaction. Very often, it will not even be realized if a basic requirement is fulfilled but, of course, a company will realize very quickly if it is not. Examples of basic requirements in the area of CEUs might be an efficient administration, a well-planned schedule or the conveying of fundamental knowledge in the subjects that are taught. As far as the students' abilities are concerned the pre-test detects a *base theoretical knowledge* and *the ability of its practical use* as basic requirements (using the Penalty Reward Contrast (PRC) Analysis which is explained further on).

Performance requirements are stated and realized very well. Very often, the fulfilment of these requirements is measurable and comparable. The better a CEU fulfils a performance requirement, the higher the satisfaction of a company. Examples of performance requirements can be the duration of the study, the international study opportunities for the students or the equipment. From the pre-test *social competence* as well as *knowledge and abilities in presentation techniques* result as performance requirements.

Enthusiasm requirements are not stated; they are latent and not expected. If these requirements are not fulfilled by a

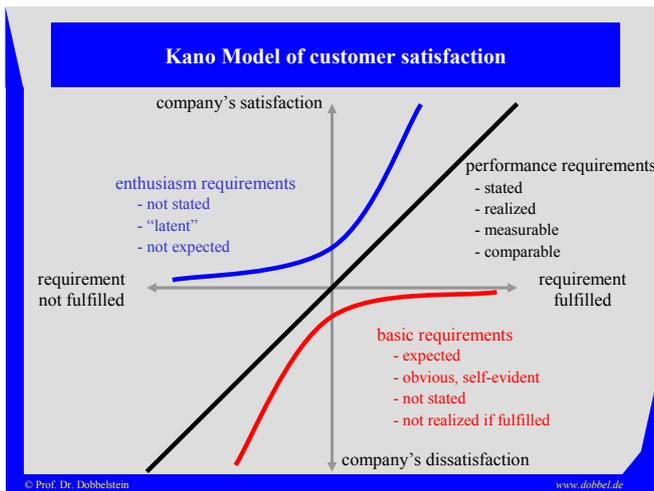


Figure 7
The Kano Model of customer satisfaction (Dobbelstein & Schuckel, 2001, taken from Kano, 1984)

CEU, there will be no response from the companies: they will not be dissatisfied or disappointed; they will not even realize it. However, if a CEU fulfils such requirements, companies can be pleased quite easily. The fulfilment excites companies and strengthens their loyalty towards the CEU. Examples may be a high reputation of the university or the integration of well-qualified employees of the cooperating companies into conferences or lectures. In the pre-test training the students' ability to cope with stress is detected as an enthusiasm requirement.

One method to categorize requirements as basic, performance or enthusiasm requirements is the Penalty Reward Contrast (PRC) Analysis. The PRC Analysis tries to find a correlation between the satisfaction with one requirement and the overall-satisfaction score by using a categorical regression (see Figure 8).

Within the PRC analysis for each requirement, the responding companies are divided into two groups: the groups of companies that are satisfied with the analysed requirement and the groups of companies that are dissatisfied with it. The regression coefficients between the satisfied group on the one hand, the dissatisfied on the other hand and the overall-satisfaction score can be interpreted as follows: A high coefficient between the dissatisfied group and the overall-satisfaction can be interpreted as a (general) punishment for dissatisfaction with one requirement. Vice versa, a high coefficient between the satisfied group and the overall-satisfaction indicates a (general) reward for the satisfaction with this requirement. In a further step, the coefficients of the reward and the punishment have to be compared for each requirement. A high penalty coefficient and a low reward coefficient indicate that there is only dissatisfaction if a requirement is fulfilled badly but no satisfaction if it is fulfilled well. Vice versa, a low penalty coefficient and a high reward coefficient show that there is nearly no penalty for bad performance but high reward for good fulfilment. The requirement is one of enthusiasm. If there are two high coefficients the requirement can cause reward as well as punishment, it is a performance

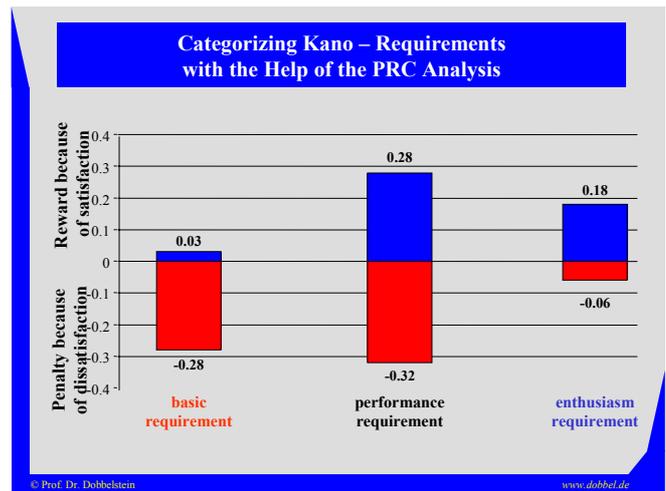


Figure 8
Penalty Reward Contrast Analysis (Dobbelstein & Schuckel, 2001)

requirement (Dobbelstein & Schuckel, 2001).

Unfortunately, the categorization of requirements is not static. Some years ago, international study opportunities might have been an enthusiasm requirement, because not many universities were offering them and students who studied abroad got very good jobs. However, times change and more and more universities recognised that for their cooperating companies international study opportunities were very important, so they offered them in order to satisfy the companies. International study opportunities have become a performance requirement and some companies started to say that they would not send their students to universities that did not offer that opportunity. For these companies they have become a basic requirement.

The requirements are not independent of each other. If a basic requirement is not fulfilled it will make no sense to improve a performance or an enthusiasm requirement. If a university does not provide a basic knowledge, it will be a waste of time and capacity to improve the equipment or to invite people from the companies to join lectures.

Conclusion

This essay suggests some methods to measure the companies' satisfaction with cooperative education practices and to find out how they may be filled with enthusiasm for these. If the CEUs want to remain competitive in future, they will have to do both. The BA-Ravensburg, Germany has done a pre-test in this area based on the methods and procedures presented in the essay. There will be an empirical research project conducted at the Technikon Witwatersrand, South Africa and BA Ravensburg, Germany in 2004. It will be interesting to see what the similarities and differences are, according to the companies' requirements. Other interested higher education institutions are welcome to join these studies or to make suggestions as far as the discussion and improvement of the research method are concerned.

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