

# **Efficacy of CBQ (Cost Benefit and Quality) as an advisory tool to optimise cost-effectiveness and quality development of in-company apprenticeship training**

Lusanda Bantwini and Tsholo Mungoni

*ECSECC, East London, South Africa*

*merSETA (The Manufacturing, Engineering and related Sector Education and Training Authority), Johannesburg, South Africa*

**Summary:** The South African government continues to make many financial attempts to boost the quality of vocational education and training (VET). However, poor quality outcomes fail to inspire employer's confidence because industry needs people who can be productive in the workplace immediately and there is a gap between industry expectation and VET graduate capability. The national skills strategy of the country acknowledges that the low productivity in the workplace is partly due to inadequate training. The paper presents and confirms that when CBQ is applied in a systematic manner during the apprenticeship duration it is effective as an advisory tool to optimise cost-effectiveness, benefits and quality of in-company apprenticeship training. CBQ is proving to be a powerful tool in South Africa to broaden the understanding of trainers in evaluating the impact of their training both in terms of competence development and benefits for the company.

**Keywords:** cost-effectiveness, quality development, advisory tool

## **Introduction**

The national skills development strategy of South Africa recognises that the country is still challenged by low productivity in the workplace, slow transformation of the labour market and a lack of mobility of the workforce, largely as a result of inadequate training (NSDS III, 2011). This is despite government's many attempts to boost vocational education and training through high financial expenditure; as such the poor quality outcome for VET graduates does not inspire employer confidence because industry needs people who can be productive in the workplace immediately.

Employer decisions to meet productivity demands either through employing qualified staff or by training its own artisans is based on assessing the cost-effectiveness and efficiency of either option. The decision as to which option will be most economical can be subjective. Without an evidence-based comprehensive mechanism it is difficult to evaluate whether developing own workforce through apprenticeship training is cost-effective and produces productive workforce of good quality, as opposed to employing qualified staff.

## **Methods and research design**

CBQ is an online self-evaluation instrument to measure costs, benefits and quality of the in-company component of apprenticeship training. It was developed by the University of Bremen and further adopted to suit the South African context within the

frame of a research initiative launched by the merSETA (Hauschildt and Brown 2011). Net Cost or benefit is evaluated taking into account:

(Time of in-company training of an apprentice x degree of apprentice's productivity compared to skilled/fully trained workers x salary of a skilled worker) – (Staff costs of trainees + staff costs of trainers + operational costs + other costs).

Quality is evaluated using the following 6-quality criteria: reflective work experience, professional level of learning which is based on the quality of work tasks, autonomous learning evidenced by the ability to fulfil complex work tasks, learning in the business process, vocational commitment and professional competence (Hauschildt and Brown, 2011).

The paper investigates whether the CBQ method is effective as an advisory tool when applied in a systematic manner during in-company apprenticeship training to optimise quality development and benefits for employers. The study is based on the case study in South Africa.

The research takes the form of a longitudinal study analysing in-depth 10 case studies observing change (s) in cost, benefit and quality of apprenticeship as units of measurement and possible explanation thereof. The company managers or staff responsible for apprenticeship training who are going to work with the CBQ method need to have a pre-understanding of the contextual issues of cost-benefit and quality of training offered by their companies. This level of pre-understanding is documented by the help of guided interviews and questionnaires. After an initial analysis of quality, costs and benefits of in-company training provided in their companies, the assessment results are discussed while contextual information for the interpretation of their company data is given by the research tool and the research team. All data of the status quo of their in-company apprenticeship training forms the baseline for a later comparison.

Participants reflect on the analysis offered by the CBQ tool as it points to strengths and weaknesses of training offered; possible measures for further quality improvement can be derived from the outcomes of the CBQ analysis provided that company managers or staff responsible for the shaping of in-company training understand the contextual factors. This understanding is measured and documented in a second evaluation following a similar structure. After approximately one year, costs, benefits and quality of training are assessed in the participating companies once again in order to observe changes in results after applying the lessons learnt.

This paper selects only a sample of cases and provides an in-depth analysis of how company managers and staff responsible for the shaping of training processes in their company have used individual CBQ results to identify potential areas of improvement in the structure and design of apprenticeship training. From the data comparison and the information gained out of the two series of semi-standardised interviews it can be concluded whether (and if so to what degree) changes have been introduced that have a direct linkage to the CBQ tool and its quality as an advisory tool.

## **Results**

The summary of results point to the usefulness of CBQ as an advisory tool whereby apprentices contribute productively to the employer during the apprenticeship, optimising benefits and quality development.

**Figure 1: Comparative benefit-quality results from advisory use of CBQ**



**Figure 2: Comparative quality results**



Figure 1 and 2 illustrate some probable degree of the changes in cost-effectiveness and quality and linked to CBQ advisory tool using an example of a welding case in one company. The company receives subsidies for conducting the training and has a total number of six apprentices. When the company was first introduced to the CBQ, the apprentices in this trade were spending only about 44% of their training time during the training in the workplace and this is quite low if the apprenticeship is to yield higher quality and returns for employer. Ideally, this time should be as much as 80%. Likewise, the level of tasks they performed was pitched at skilled level was as low as 25%, the rest was pitched at semi-skilled and low-skilled level. Apprentices spent about 36% of their time in vocational schools. Moreover, in terms of quality there are other areas of skill development to look at

such as professional learning, autonomous learning and reflective learning as the potential focus areas for improving the organisation and design of training programmes. Initially the apprenticeship training was running over a two-year period.

The post-advisory results on the right hand side of figure 1 and 2 depict how the changes in the structure of design and structure of the company apprenticeship training has optimised its cost-effectiveness and quality. A period of more 12 months lapsed between getting the first results of CBQ to identify areas of improvement and the second case to see the effect of the changes on the performance of the apprenticeship training. One of the (strongest) changes evident in this case (when it did another case in 2014) is that the duration of the apprenticeship increased from 2 – 3 years. The results confirm that the power of the tool is visible when advisory is done on medium to long-term, in this case three years (Hauschildt and Brown, 2011). Both cost-effectiveness and quality development improved significantly and this is attributable to some combination of the following changes; training time in the workplace increased from by 22% to 66%; time spent in the vocational schools dropped by more than half to 15.4% and the company optimised cost-effectiveness since first year as the apprentices were contributing more productively. The complexity of task also intensified as well as independent learning. Quality improved and the outcome could be evidenced by the professional development. Reflective still presents further opportunities for optimisation.

## Conclusion

CBQ is proving to be a powerful tool in South Africa to broaden the understanding of trainers in evaluating the impact of their training. It introduces the dimension of factoring in productive contribution of apprentices when measuring the cost-effectiveness and quality of apprenticeships. Though the trainers acknowledge the productive contribution of apprentices during training duration, however, this dimension seems to be overlooked when analysing the benefits of in-company apprenticeships which plays a determining role in the planning processes of taking on new apprentices. Moreover, the paper confirms that CBQ when applied in a systematic manner is effective as an advisory tool to optimise cost-effectiveness, benefits and quality of in-company apprenticeship training.

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