

Chapter 32

A Learning Outcome Inspired Survey Instrument for Assessing the Quality of Continuous Improvement Cycle

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ABSTRACT

Measuring the effectiveness of a continuous quality improvement cycle in education is a cumbersome and sophisticated process. This article contributes a comprehensive self-assessment instrument for identifying the strengths and weaknesses of all phases of a continuous quality improvement cycle, including planning, data collection, analysis and reporting, and implementation of improvements. To this end, a four round Delphi study soliciting a total of 23 program quality experts from four universities was conducted. The produced survey instrument contains a total of 50 questions. The instrument may be used by quality experts in education to judge the quality of their continuous quality improvement cycle that endeavours to assess the attainment of learning outcomes in various undergraduate educational programs. Moreover, the instrument could be exploited to infer relevant user and system requirements and guide the development of an automated self-assessment tool aimed at identifying the shortcomings in educational continuous quality improvement cycles.

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INTRODUCTION

Ensuring quality within education is pivotal to the success of learning and teaching (Kanji, Malek, & Tambi, 1999). One of the key elements to achieving this goal is to employ an effective continuous quality improvement (CQI) cycle (Thune, 2017). Modern continuous improvement cycles at the program level focuses on measuring the attainment of learning outcomes (Sekhar, Farook, & Bouktache, 2008; Sikande, Aziz, Wasim, Hussain, & Jahanzaib, 2017), which constitute the foundation of outcome-based education (Davis, 2003). However, realizing an effective continuous improvement cycle in education remains a daunting activity that necessitates a deep understanding of all relevant phases and their specifics as well as expertise in specifying the appropriate standards and philosophies for a particular educational context (Brown & Marshall, 2008). Moreover, adopting a poor continuous quality improvement cycle may lead to invalid results, wrong interpretations and no actual enhancements to the program (Dew & Nearing, 2004). Although achieving high levels of attainment of educational learning outcomes is a primary endeavor of educational programs, these programs often overlook the importance of establishing and following an effective continuous improvement cycle. This may be a consequence of the lack of well-defined tools to guide and monitor continuous improvement processes. Therefore, a critical question to address is “How can one assess the quality and effectiveness of their CQI cycle in education?”

Until today, there is no elaborate instrument that neither answers this question nor assists program quality experts judge the appropriateness and quality of their program assessment methodologies and processes. For instance, Rogers (2014) proposed a generic self-assessment accreditation tool for scoring the quality of ABET-focused continuous improvement processes. This tool takes the form of a rubric and is brief, which does not cover all phases of continuous improvement cycle (e.g. the implementation of improvement actions). Moreover, it does not capture the missing gaps in the CQI cycle and necessary details about the assessment methods, tools, and best practices.

This research delivers multi-fold contributions that are useful for program quality experts as follows:

- A holistic instrument to identify the strengths and shortcomings of continuous quality improvement cycle implemented by existing educational programs. Quality experts and decision makers in education can use this instrument to self-assess and check the progress and compliance of their programs with educational standards and best practices. The results of the self-assessment will help identify any gaps in the continuous improvement cycle. This extensive instrument covers four major phases within the continuous improvement cycle, namely planning, data collection, analysis and reporting, and implementation of improvements;
- The use of the Delphi study methodology to produce a comprehensive CQI self-assessment instrument. The detailed methodology will serve as a thorough guide for other researchers in the field so that they may adopt the same methodology in establishing similar instruments.

This research article is organized into five sections. Section two defines the key concepts in education, including outcome-based education, and identifies the shortcomings of existing self-assessment tools of CQI. Section three describes the research methodology executed to develop the CQI self-assessment instrument. Section four describes the sections of the instrument along with the way to use and interpret the instrument by quality experts. Section five summarizes the potential limitations of the study.

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