

One is Good, More is Better: Engaging Faculty in Lean Teaching

Conference Theme 2: Applying Lean to the Primary Process of Education

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Abstract

Discusses the challenges of engaging faculty in the Lean teaching pedagogy, beginning with the first early adopter and then on to other members of the faculty. This is contrasted to the challenges of gaining top university leadership support for the Lean teaching pedagogy, as well as for Lean management applied to academic and administrative processes. Concludes that single-faculty adoption of the Lean teaching pedagogy is a necessary pre-requisite to gaining wider acceptance in a department or school, and that many important benefits can be realized if even only one faculty member adopts the Lean teaching pedagogy.

Introduction

The core value-creating activity in higher education is teaching, yet the basic methods used by faculty to teach have undergone little change for many decades. Where improvements in teaching are made, such as “flipped classrooms” and “blended learning,” the specific improvement ideas or methods are derived principally from within the domain of adult learning theory and research. External challenges to current methods are rare and often quickly rejected.

Traditional and newer teaching pedagogies can have the appearance of effectiveness based on empirical evidence such as test scores or student feedback. However, these pedagogies may continue using assessment methods that limit or reduce student learning. For example, students who exhibit acceptable critical thinking skills in the classroom often fail to exhibit these skills post-graduation, leading to many problems in the workplace and society. Traditional and newer teaching pedagogies also lack any unifying framework or principles to assure focus on students and guide faculty’s improvement efforts and decision-making. For these reasons, the Lean teaching pedagogy is an attractive alternative to traditional and newer methods.

Lean teaching is the application of Lean principles and practices to teaching (Emiliani, 2013). Lean principles are “Continuous Improvement” and “Respect for People,” while Lean practices are the tools and methods commonly associated with the Toyota production system (Monden 1983; Ohno, 1988; Womack, *et al.*, 1990; Liker 2004; Kato and Smalley, 2011). The purpose of Lean teaching parallels the purpose of Lean management (see Notes [1] and [2]) as used in organization, which is to improve the value of goods and services (higher education) for end-use customers (students, payers, employers, and society) (Womack and Jones, 2003). This is achieved, in part, by improving processes through the eliminating waste, unevenness, and unreasonableness (Ohno, 1988). The result is improved flow and quality, lower costs, and higher throughput – all of which are relevant to higher education. Importantly, improvement must be made in non-zero-sum (win-win) ways, not only to gain support for improvement, but to assure that Lean does not harm any stakeholder.

A recent survey indicates that teaching processes contain many different types of errors that detract from students' learning experience and their perceptions of quality and value (Emiliani, 2014). Another survey identified what constitutes quality teaching from current and former students' perspectives (Emiliani, 2014a). Combined, these survey results indicate that traditional teaching methods are unsatisfactory and that students view progressive teaching methods as significantly better.

The question, then, is who leads efforts to improve teaching? Is it the responsibility of individual faculty, department chairs, deans of schools, provosts, or university presidents? It is, of course, a shared responsibility. However, getting diverse faculty and administrators to agree on a relatively unknown approach to improving teaching is a great challenge. Though it is a worthy challenge, the prospects for success are low if approached from the bottom-up, with faculty appealing to leadership. Empirical evidence indicates that leading organizational change from conventional management to Lean management requires leadership of a progressive type not commonly found in industry (Emiliani *et al.*, 2007; Kenney, 2011, Byrne, 2013), let alone in higher education.

Discussion

University leaders who are committed to Lean management across the enterprise, both in teaching and administration (Balzer, 2010), must devote themselves to learning Lean management through the daily application of its principles and practices (Emiliani, 2012). The fundamental premise is that leaders cannot lead people in something that they know nothing about, just as a physician cannot teach a medical student how to repair an injury if the physician has not done it many times before. Practical disciplines such as teaching require one to learn from others.

Top university leaders are not ready-made Lean leaders, which poses a challenge for both leaders and followers. Leaders with 30 or more years of experience in higher education may prefer traditional teaching methods and lack motivation to learn substantially new ways of thinking and doing things. Further, learning Lean principles and practices requires leaders to participate in process improvement activities, thrusting them into a position of non-expert. Most senior leaders find this very uncomfortable, so they seek to avoid participation and instead delegate process improvement to others. And, as a result of biases and misunderstandings, many leaders may view progressive Lean teaching as detrimental to students or the university.

Faculty may have no interest in Lean teaching because they have been successful without it, or, like university administrators, refuse to be put into a position of non-expert. Other faculty will surely resist for its own sake, to establish one's own authority and autonomy in the classroom, or because of disdain for improvement methods that originated in industry and thus lack standing in relation to adult learning research.

However, faculty, being front-line workers, might embrace Lean teaching as a means to improve student learning outcomes and achieve substantial reductions in teaching errors. In other words, faculty may see an opportunity to better satisfy students and make their own jobs less complex and more enjoyable (Emiliani, 2004). Most people would like the opportunity to make their job easier, while at the same time producing a better result. Faculty are unlikely to be an exception.

Faculty who see opportunity in Lean teaching may want or expect leadership support for Lean teaching prior to making any commitment to it. Support generally comes in two forms: engaged

leaders or limited casual (mostly verbal) support (Emiliani, 2005). Or, there may be no support at all. The question then becomes, should individual faculty adopt Lean teaching in the absence of management support, even at the department level? What is the rationale for doing so, especially when there may be no extrinsic rewards? Is it worth the effort to do anything different than what one's peers are doing? Will doing so expose one to unnecessary, possibly career-damaging risks?

The answers to these questions are based on individual faculty's interests and motivations. Many will remain in conformity with tradition, deferring until the benefits of Lean teaching are proven to them, in every way conceivable, or until pressure to change becomes inescapable. Such faculty, however, should consider their responsibilities to the profession, which includes advancing one's capabilities, influencing others to improve (students and peers), and achieve demonstrable improvements in teaching over time.

Professional responsibilities suggest a bias for immediate action, not long-term inaction. That means to begin now and not wait for others to "get on board" – whether peers or top university leaders. If one begins Lean teaching now, then that will have an immediate positive impact with one's students – perhaps hundreds of students per year. Yes, it would be nice if students could learn and retain as much in other courses as they did in yours, but at least they learned and retained a lot in your course. That outcome is good enough for now, but it is certainly not good enough forever. One faculty engaged in Lean teaching is a good starting point from which to gain experience and build upon. From that comes needed story-telling that helps other faculty overcome their biases and concerns.

It is human nature to strive for a bigger impact. The goal should indeed be multiple faculty that embrace Lean teaching – in a department, school, or the entire university – along with enthusiastic support from engaged administrators. However, it is wise to be pragmatic and recognize this as a building process, from one person, to two persons, to three persons, to a team of faculty, and that this will occur over time. The logic and benefits of Lean teaching that are so clear to one may be utter nonsense to another. Difficulties found on an individual basis multiply on a group basis. Therefore, different strategies must be developed and applied to close these large gaps. Again, this is where leadership matters most (Byrne, 2012).

It is also human nature to strive to achieve a lasting impact. The history of progressive management informs us well. We know with certainty that changes in leadership (Emiliani *et al.*, 2007) are a primary cause of backslide or abandonment of Lean management. A lasting impact can only be achieved if new leadership shares a constancy of purpose (educating students), method (pedagogy), and management practice (Lean). Universities will have to develop internal training programs for both faculty and administrators, and be committed to the training. Top leaders must never say "this costs too much" or "we can stop now because Lean teaching is in our DNA." Lasting impact comes from lasting effort.

Conclusion

The core value creating activity in higher education is teaching. To that end, much is known about students', parents', and employers' dissatisfaction with higher education: its cost, academic and administrative processes, teaching, learning outcomes, and workplace preparedness. The typical forms of remediation undertaken by faculty and administrators in recent decades have proven to be inadequate.

The future challenges facing both students and higher education demands fundamental, yet practical reforms. Educators can continue to reject improvement methods born in industry, or they can begin the process of scholarly inquiry, for which they are well equipped, to understand the principles and practices of Lean management and how to apply them to improve teaching – for the benefit of all.

While the benefits of Lean teaching may be greatest if all faculty in a department, school, or university practice it, with support from engaged leadership, this desired future state will be difficult to achieve. Yet, the current state calls for immediate improvement in teaching (Emiliani 2014, 2014a) by any faculty member who is interested in doing so, despite risks and likely zero extrinsic rewards. If we are to believe that “students matter most,” then no impediment is too great to restrain even one faculty from beginning.

To delay improvement until a more desirable environment is presents itself is unreasonable, unwise, and a disservice to students. Further, beginning immediately starts the process of daily practice that one needs in order to develop the skills and capabilities that deliver greater benefits (see Note [3]). If students experience the Lean teaching pedagogy only once in their curriculum, then they will have at least gained an awareness of the differences between traditional teaching and progressive Lean teaching. Perhaps they will take what they learned in that one course and apply it the challenges they face as employees or future managers. If so, some good will have been done.

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Notes

[1] The term “Lean management” is the sum of The Toyota Way, “Continuous Improvement” and “Respect for People” (Toyota, 2001) and the tools and methods of Toyota’s production system (Monden 1983; Ohno, 1988; Womack, *et al.*, 1990; Liker 2004, Kato and Smalley, 2011).

[2] Lean management is defined as: A non-zero-sum principle-based management system focused on creating value for end-use customers and eliminating waste, unevenness, and unreasonableness using the scientific method (Emiliani, 2008).

[3] By way of analogy, you learn how to play an instrument before starting a band. It makes no sense to require a band be formed as a prerequisite to learning how to play an instrument.