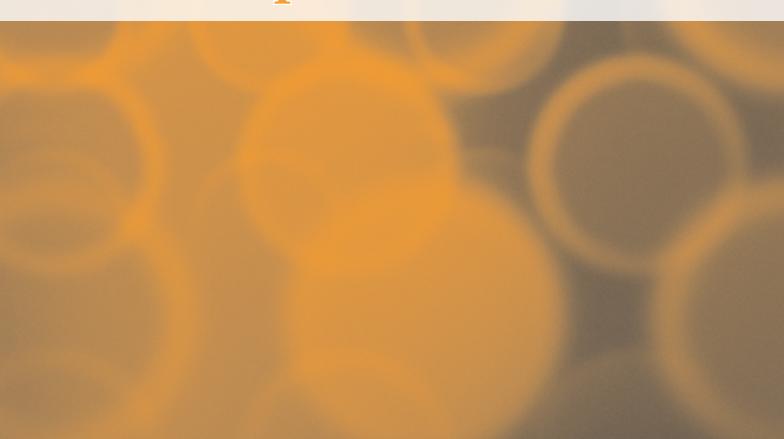# Quality improvement using Lean and Six Sigma processes

" The process allows people to think differently.

Tim Eyton-Jones
Principal, John Ruskin College

Sam Parrett
Principal, Bromley College

Danny Ridgeway
Principal, Bexley College

Introduction and background to Lean and Six Sigma

When Sam Parrett, Principal of Bromley College, first approached Bexley and John Ruskin Colleges with the idea of a partnership initiative, her fellow Principals weren't immediately clear what the project was about.

The 'Lean' and 'Six Sigma' processes Sam was interested in can be used by any organisation as part of its quality improvement strategy. The Lean principles are focused on creating high customer value, and Six Sigma is a process for producing ostensibly near-perfect products and services. Taken together, they help organisations:

- focus on their customers
- understand the detail of individual processes
- manage and improve processes
- remove waste and elements that do not add value to a process
- use data to understand and manage any deviation from the ideal
- engage staff in the improvement strategy by training them to use the techniques, and
- carry out improvement activity systematically.

While none of this approach requires partnership working, Sam was clear about the potential benefits of using it collaboratively and as a vehicle for sharing – including the increased potential for *innovation*, rather than just *development*.

The journey and the achievements

"We're all relatively new in post", says Tim Eyton-Jones, Principal of John Ruskin College, "so we saw it as a good opportunity to get together and do some collaborative working."

The team began by scoping the project and setting out their expectations. "We were very clear, right from the outset", says Danny Ridgeway, Principal of Bexley College, "that this was about improving the quality of the students' experience." "It wasn't about shedding jobs", adds Tim Eyton-Jones, "it was about becoming more efficient and effective at what we do."

Choosing the areas of provision to focus on was the first test of the teams' ability to work together, and while any aspect of provision could have been chosen for this style of review, through a process of negotiation they arrived at:

- enrolment
- fee collection
- payroll, and
- student services.

Leadership and the Shared Service model

The practical stages of the project were to:

- identify specific elements of provision that need to be improved
- identify all associated processes and their physical locations
- determine the current baseline performance for each chosen issue
- identify the current cost and impact of the issue
- clearly articulate the intended outcome
- identify and recruit appropriate staff to the project team, and finally
- begin the quality improvement journey.

For the most part, this short-scale project, completed in just twelve months, was a resounding success, but it wasn't plain sailing for all partners. Part way through the initiative, the Bromley College team lost its project manager. Whilst the role was quickly reassigned, the ultimate impact of the project was undoubtedly reduced for this partner. The gains made, however, were enough to convince staff of the effectiveness of the overall approach and to continue to develop their new processes.

Tim Eyton Jones is in no doubt about the benefits of leading this sort of project: "If you actually enter into a sharing relationship, you learn so much more – about the issues and approaches of the other organisations – and that sort of cross-fertilisation of ideas can only enhance your own provision. Colleges who go it alone are at a distinct disadvantage."

The partners agree that one of the most valuable outcomes of the process was that it allowed people to think differently. "There was an expectation for staff to put in extra hours and extra effort", states Tim Eyton Jones. "We might be rather surprised by how many extra hours actually went into this project." But the approach, as a whole, changed the mind-set of some managers, who are now constantly on the lookout for improvements they can make. And arguably the core of this transformation was the invaluable opportunity to share concerns and issues with peers in other Colleges, and to work together to find a 'third way'.

Outcomes

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Enrolment

Data plays a central role in quality improvement as it not only allows an issue to be clearly articulated, but it also allows key questions to be answered: *'are we resolving the issue?'*, and ultimately *'did we resolve the issue?'*. If an organisation invests in a quality improvement journey without identifying the mid-term indicators it expects to see, then it is essentially driving blind. John Ruskin College was very clear about its baseline data, the improvements this new strategy should achieved, and how they would know if they were 'getting there'. They found that:

- texting prospective students before enrolment reduced the number who failed to bring a valid method of payment, proof of qualifications and/or identification
- introducing online information, including Parents Pages and a SharePoint site, reduced repeat enquiries
- using a greeter or 'gatekeeper' as students arrived ensured learners with missing documents did not queue unnecessarily
- more effectively targeted initial assessment testing on only those who needed it, together with allocating students to specific time slots, reduced both testing and unnecessary waiting
- enrolling Key Stage 4 pupils early reduced the numbers attending the main enrolment sessions.

The immediate, short-term, impact of these improvements included:

- a reduction in the average enrolment time from 1.5 hours per student in 2011 to 45 minutes in 2012
- a reduction in waiting time at the finance department from a maximum of 4.5 hours in 2011 to a maximum of 25 minutes in 2012
- If you actually enter into a sharing relationship, you learn so much more

But arguably the more important improvements between 2011 and 2012 were those that affected the bottom line:

- increased conversion rate from enquiry to enrolment, from 51% to 65%
- increased early enrolment of progressing students from 65% to 75%
- improved retention of year two students by 14%, and
- for the first time in eight years, the College met its funding target for 16-18 year olds.

" If you actually enter into a sharing relationship, you learn so much more

Fee collection

Closely linked to the improvements in the enrolment process, the 'fee collection' element of the project had a strong focus on cash flow and the College's finances.

Improved and simplified enrolment forms now effectively meet the needs of the finance teams, as well as the academic staff. Clearer information around bank details and alternative methods of payment, together with clarity about the refund policy and consequences of non-payment, set the new tone of efficiency in 2012.

The introduction of a set-up fee for instalment payments reduced the number of students choosing this option. This greatly increased fee collection during enrolment, improving cash flow at the beginning of the academic year, and led to a consequential reduction in the staff hours needed to chase late payments further down the line. The new process also includes chasing any late payments earlier – in October, rather than February. For John Ruskin College, together with improvements in the bursary application process, these initiatives reduced the number of enrolments placed on hold from 54 in 2011 to just 27 in 2012, representing a significant drop in the fees being owed. And where fees have been a problem for students, the streamlined procedure and increased emphasis on customer service has led to a significant increase in the number of cases resolved within 14 days, from 21 in 2011 to just three in 2012.

Payroll

Whilst the improvement in enrolment practice was primarily about improving customer satisfaction, it is in the payroll stream that we see the first major financial savings. New integrated human resource and payroll systems, with reduced process steps, reduced manual checking, reduced risk and errors, led to significantly greater control; particularly of actual vs. contracted staff hours. For Bromley College in particular, this led to a reduced staff utilisation variance, from 12% in 2011 to just 3% in 2012, saving around £660,000.

Student services

"Those three (enrolment, fee collection and payroll) were relatively straightforward processes", says Danny Ridgeway, but the student services project to create "a one-stop-shop, was the broadest challenge, and the one that took most time to establish a focus."

The development team wanted to ensure that students weren't buffeted from one department to the next, so they introduced a reception function to ensure that any queuing was for the right service. Some partners also redesigned the layout of their student services area to improve flow, clarity and comfort. For Bromley College alone, these strategies and improved processes allowed them to reduce the number of staff required, while improving the services provided, making a saving of around £60,000.

At Bexley College simple changes, such as switching from post to email, saved a further £5,000 and improved communication times. Clearer awareness of, and deadlines for, the Learner Support

Fund led to a significant increase in the number of applications: up from 271 in 2011 to 408 in 2012; an increase of nearly 50%. Further savings have been made by redesigning the student handbook; making use of QR codes. When scanned with a mobile phone these codes link prospective learners to the very latest information on the Colleges' websites. This reduces the cost of printing and also the need for annual reprinting as the handbook information will not date so readily.

"We haven't lost any staff", says Bexley's Principal, Danny Ridgeway, "but we have used them more efficiently. We've freed up staff to be able to put support in place for students much earlier than we would have otherwise been able to do."

Next Steps

The partners have already learned many lessons from their September 2012 experiences and plan more improvements next year. But perhaps of more interest in this case study is the legacy of the project overall on the rest of the Colleges' work. Staff are already using the Lean and Six Sigma approaches to process map and improve other elements of provision, including wider applications in HR, purchasing procedures, and the examination and invigilation processes. The Principals feel that the cost of investing in these new approaches has been an investment in the quality system as a whole that will continue to pay dividends for years to come.

For Bexley College, the tools and the collaborative approach to innovation have already prompted it to form a second partnership, this time with its local Adult Education College, to work on credit control practices.

Outcomes for the sector - Lean Six Sigma Toolkit

For the rest of the sector, the benefit of the project being funded through the SFA's Grant Fund is the toolkit on Lean Six Sigma and how it can be used by other Colleges. The toolkit is available for all Colleges to access and learn from on the shared services section of the AoC website: (www.aoc.co.uk/share-services/lean-six-sigma)

A short film has also been produced by AoC on the teams' experiences in managing this change project. The film can be viewed at the shared services section of the AoC website: (www.aoc.co.uk/shared-services/materials/gf-videos)

For more written case studies on Shared Services, visit the shared services section of the AoC website: (www.aoc.co.uk/shared-services/case-studies)