Technology in FE – Algorithms & Relationships

Foreword

My first experience of teaching with computers was at Stannington College, Sheffield, (now a housing development) to a group of young motor vehicle apprentices. The room, one of two, contained 16 BBC Micro Computers and the students enjoyed playing "Pong" as part of their Wilt like general studies lesson late on a Friday afternoon.

Nowadays the motor vehicle students maintain and repair vehicles run by computers and carry devices in their pockets which have more memory, processing speed, connectivity and capability than the combination of all the BBC micro ICT rooms which belonged to the Maths/Computing department in the early 1980's.

The last Association of Colleges (AoC) technology survey in 2012 suggests that not much progress had been made despite the huge sums of money invested and indeed suggests that colleges "were being hampered from delivering the government's policy aims because of their inability to use technology effectively."

There are some pockets of innovation where the Principal, a member of the governing body or a passionate member of the SMT actually understands the potential technology has to transform learning as they are attempting to change the culture of the college from an analogue to a digital mindset. It is an enormous challenge and needs more than a few passionate pioneers.

Things have taken the turn for the better just recently as newly appointed Minister for FE and Skills, Matthew Hancock (@matthancockmp on twitter) has taken a personal interest in the issue. He has formed an action group of industry and provider interests to try and support colleges in their attempts to ensure they make the best use of technology to improve teaching and learning. It is systemic change to the funding, inspection, audit, and assessment regimes which is urgently needed to give teachers the space to innovate.

There is much to be done however as colleges try to make up for lost time and avoid what Martin Bean, Vice Chancellor of the Open University warns is the "growing crisis of relevance" in our schools and colleges.

My grandchildren will leave school in 2027, 2028 and 2029 and they will leave schools that will have no pens, no paper, no books, no rows of desks, no whiteboards no printers, no desktops, no ICT suites and will be accustomed to working with learning analytics, gesture computing, onscreen assessments and instant feedback, speech to text and text to speech recognition and personalised blended learning programs accessible every day, all day and night and year round.

I hope they will have the choice of going to an FE college to continue their learning but if the slow progress that has been made since incorporation is anything to go by I am not sure they will?

This report should help colleges prepare for the learning and learners of the future.

Bob Harrison
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Executive Summary

This report is for anyone involved with making technology decisions in Further Education (FE) and has been designed in a way to consider the colleges and education suppliers' perspective. Each section has ideas for both groups to bear in mind when developing and assessing education technology. Whether based at a college or if an education supplier we hope that this report proves useful with your current and future technology projects.

Colleges will find out how difficult it can be to develop and roll out successful EdTech products, as well as find out how they can help improve products, and discover why the sales process is so more crucial than you might expect in developing great education technology. Existing FE technology suppliers will find out about some tried and tested roll out practices, including advice on what to do if sales have slowed or become stagnant. Start-ups and organisations that are looking to work with education or FE will discover why this could be a great target market.

This report looks at key aspects of how suppliers should endeavour to develop products, which is based on the advice and experience of seasoned technology veterans. We highlight how these development processes and business practices affect FE. We also suggest ways that educators could assist suppliers.

Section 1 looks at the time and cost implications of suppliers' sales efforts for both colleges and suppliers. We consider how much time colleges will spend annually dealing with sales enquiries, as well as the overhead costs for suppliers to get some early FE customers. We question whether the costs of attracting new customers could be converted into an R&D budget for early adopter colleges to trial new services and offer input.

Getting feedback and collaborating with potential customers is vital in developing great products. The best sales team in the world will struggle to engage with customers if the product is not fit for purpose or does not fulfil a need. Section 2 looks at the importance of "product-market fit" and highlights how it is extremely difficult to get products right at the first attempt, even Google, Apple and Microsoft did not get it right first time. We will demonstrate that the best way to achieve this crucial aspect of any product is through collaborating with potential customers.

One of the main causes of companies failing is rolling a product out too soon. Section 3 looks at the best indicator for gauging when you know you have a great product and when it is time to look for new partners and customers. We also look at some of the dangers that result from premature scaling, like high "customer churn" and turnover of key staff members; whereas the benefits of rolling out at the right time will be "less selling and more buying."

Finding the right target market is one of the most important decisions a young company can make. Section 4 looks at some of the key considerations suppliers should bear in mind when looking for a target market for their product. We highlight how and why, FE could be the perfect target market for start-ups with the right product.

Once a supplier has identified their ideal target market we discuss the reasons why sales become easier for market leaders. Becoming a market leader will be a key strategic goal for new suppliers and section 5 discusses the level of focus required for start-ups and new providers to become a market leader. Section 6 looks at the negative consequences for any organisation that loses their focus.

> "This report has changed my attitude! I got an email from a start-up I liked the sound of what they were offering, The company asked for a meeting and I've agreed" Caron Sandeman, Dundee College

Section 7 looks at the "Technology Adoption Cycle, "the different profiles and expectations of each group when assessing technology. We discuss how FE could use this model to improve products and the roll out process