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DUBLIN TECHNOLOGICAL

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Teacherpreneurs*

From Vocation to Innovation
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Abstract

The global market for e-learning is projected to reach \$255 billion by 2017 with a compound growth average of 23% since 2012 (GSV Advisors, 2012). The shift towards digital learning has attracted a wave of digital entrepreneurs who are creating e-learning content, learning platforms, educational apps and online marketplaces. Nowhere is this more evident than in the online 'K-12' market (50 per cent share of the global e-learning market). The term K-12 refers to 12 years of formal primary and secondary education from kindergarten (K) or nursery essentially pre-university level education. The purpose of this paper is to investigate the motivations and processes underpinning the launch of online ventures by enterprising teachers in the K-12 industry. Teacherpreneurship (teacher-driven entrepreneurship) is yet to attract significant academic interest and this exploratory study hopes to contribute to knowledge in this emerging field by considering the knowledge from a value creation and capture perspective. The research utilises a multiple case studies approach (Yin, 2014) to try and identify patterns that underlie the practice of teacherpreneurship. The importance of studying this phenomenon lies in the pursuit of solutions to problems of access to K-12 education for children in developing and developed worlds. It also comes at a critical time when internet and communication (Digital) technologies are irreversibly disrupting the traditional education landscape for good. Simply put, learning is increasingly moving online and teacherpreneurs – with their knowledge and experience of curriculum development, learning/teaching methodologies, assessment strategies and learning outcomes – are seen as important conduits of innovation in this new education landscape. The study finds that intrinsic motivation is a major influence on teacherpreneurial behavior. Push factors such as dissatisfaction with the state of the traditional education industry are found to be a contributing influence but not a dominant one. In terms of the entrepreneurial process then, the cross-case analysis also finds that the discovery of opportunities is in all cases fortuitous and that the opportunity is exploited using an effectual approach. Finally, the research offers pragmatic guidance for nascent teacherpreneurs contemplating a start-up venture in the e-learning market space.

Key words: Entrepreneurship, teacherpreneurship, entrepreneurial motivation, entrepreneurial process, value creation and capture, e-learning

*Berry, B., Byrd, A., & Wieder, A. (2013). *Teacherpreneurs: Innovative Teachers who Lead But Don't Leave*. John Wiley & Sons. Levin, V. (2014). *The Accidental Teacherpreneur: From Classroom Teacher to Successful Entrepreneur*. CreateSpace Independent Publishing Platform, 2014.

1 Introduction

1.1 Background

The cannibalisation or market expansion of digital learning over traditional learning approaches has become a controversial reality for both practitioners and academics (Li, 2013). For instance, over a period of 13 years starting from 2002, online enrolment has expanded much faster than traditional classroom enrolment; at a rate of 21 % and 2 % respectively (Allen & Seaman, 2007). Proponents of digital learning have seen that it can be effective in potentially eliminating barriers to learning as it provides increased convenience, flexibility, currency of material, customised learning, and feedback over a traditional face-to-face (Ya Ni, 2012, p.200). In this vein, GSV Advisors (2012), reports that the global market for e-learning is projected to hit \$255 billion by the end of 2017.

The push towards digital learning has triggered a wave of digital entrepreneurs involved in creating e-learning content, learning platforms, educational apps and online marketplaces. Nowhere is this more evident than in online 'K-12' markets. The term K-12 refers to 12 years of formal primary and secondary education from kindergarten (K) or nursery. Shifting dynamics in the education industry are creating new opportunities in these markets for education entrepreneurs. Some of these entrepreneurs come from outside the industry to provide solutions to learning. However, critics of ventures by entrepreneurs from outside the education industry argue that their passion for solving problems in the industry is often limited by the lack of tacit insider knowledge of subtle problems facing end users of education products and services. It is the reason this dissertation focuses on entrepreneurial teachers, who are deemed to be well-positioned to lead change and exploit it by setting up new business ventures within the online education industry. Entrepreneurial teachers are known as *teacherpreneurs* (Berry et al., 2013). Therefore, a teacherpreneur is a unique kind of entrepreneur. Finding out what drives this behaviour is critical to this research, considering the fact that several studies reveal that teachers do not generally get into the teaching profession to get rich, but rather to make a difference in the lives of their students (Ayers, 1995; The Guardian, 2015).

How and why do teacherpreneurs create small business ventures in online K-12 markets is a core concern of this paper. The objectives of the study are to establish the motivations behind teacher-driven entrepreneurship in online K-12 markets and to determine how teacherpreneurs discover and exploit opportunities in online K-12 markets. In addition, the study seeks to identify the opportunities in online K-12 markets that could be driving teacherpreneurial activity and assess the role of technology in the process.

Teacherpreneurship is a new area in academic literature, which has yet to be viewed as a significant economic and business activity. This study hopes to offer new insights that could either provide the basis for a broader or more specific research on aspects of teacherpreneurship.

2 Literature Review

2.1 Entrepreneur & Teacherpreneur

Cantillon (1732) first used the term *entrepreneur* in an economic context to refer to an individual taking risks under conditions of uncertainty. However, more contemporary thinking, advanced by Schumpeter's (1934, 1963) work, views entrepreneurs as innovators and creators of 'new combinations'. Schumpeter maintains that entrepreneurs possess special qualities for seeing opportunities when others do not and create new combinations under a climate of uncertainty to 'creatively destroy' and disrupt established set ups. Management theorist, Drucker (1986, P.32), advocates a more behavioural and psycho-sociological understanding of the entrepreneur. He defines the entrepreneur as one who searches for change, responds to it and exploits it as an opportunity. He furthers this argument by suggesting that those who can tolerate decision making under uncertainty can learn to become entrepreneurs. In other words, entrepreneurs are not a special breed - they are, in the words of Baumol (1996), 'always with us'. Entrepreneurs thus respond to incentives and opportunities presented by their environment. It is little wonder then that teachers acting entrepreneurially should respond to the digital disruption (McQuivey, 2013) occurring in their environment.

Berry et al. (2013) were among the first to bring the term *teacherpreneur* into academic writing. They define teacherpreneurs as teachers who develop and 'sell' their pedagogical talent while finding innovative solutions to challenges facing the education industry. They also add that teacherpreneurs lead change rather than leave the field of education altogether. Since the term teacherpreneur is coined from 'teacher' and 'entrepreneur', this research, from a business standpoint, views the teacherpreneur as an innovative teacher, who, under conditions of uncertainty, creates new combinations in the education industry, exploits them as opportunities and potentially disrupts established set ups in the process. One of such teachers, Levin (2014), chronicles her accidental journey from classroom teacher to full time teacherpreneur with the help of online technologies. She opines that the days of the standard 9:00 to 5:00 jobs are gone and epitomises the focus of this research, which is about the emerging brand of teacherpreneurs who use online technologies to start small education ventures in virtual markets while maintaining or assuming other roles as educators.

2.2 Entrepreneurship & Teacherpreneurship

Penrose (1959) cautioned that entrepreneurship is a 'slippery concept' that is hard to analyse and define because it is closely related to the temperament and personality traits of individuals. As a result, it is defined in various ways by scholars. Some emphasise the risky nature of the process, while others focus on the value it adds to society. The idea of entrepreneurship being a value-adding process is recurrent in most definitions. Kirzner (1973) sees entrepreneurship as a transformative process that adds value to society and occurs in different contexts. Stokes & Wilson (2010) noted that the value entrepreneurship creates can take the form of personal wealth, family security, social inclusion or simply cultural and aesthetic pleasure. Shane and Venkataraman (2000) see entrepreneurship as a process that involves discovery, evaluation and exploitation of opportunities to bring new products and services to markets. The process view is also echoed by Shapero (1985) who states that entrepreneurship is a profound, vital, pervasive human process with important possibilities for the individual in terms of independence, creativity, personal expression, and even health. This value-adding process brings innovative or simply imitative offers to the market (Davidsson, 2003).

In Baumol's (1996) view, entrepreneurs are always among society and the goal should be to encourage productive entrepreneurship as opposed to unproductive or destructive entrepreneurship, whereby productive entrepreneurship adds social, economic and cultural value to society. It is therefore possible to envisage scenarios where the primary objective of entrepreneurial activity is to move society forward, as opposed to pure commercial gains. This might partially explain the rise of social entrepreneurship (Leadbeater, 1997) and other non-profit-focused forms of entrepreneurship.

Since teacherpreneurship is an evolving form of entrepreneurship, this research aligns its inquiry with entrepreneurship as discussed previously. Therefore, this study views teacherpreneurship as a value-adding process by teachers within the context of the education industry which leads to innovative or imitative education solutions and experiences.

2.3 Entrepreneurial Motivation & Behaviour

The factors that influence teachers' decisions to get into the entrepreneurial process is a recurrent theme in this study. Shapero (1975) had stated that the vast majority of factors driving individuals into entrepreneurship were negative. However, since entrepreneurs come from diverse backgrounds, there are difficulties involved in knowing whether push or pull factors mainly influence entrepreneurship entry. As a result, research is inconclusive as to which dominates (Stokes & Wilson, 2010). Pull factors hinge on the fact that some individuals are drawn to the entrepreneurial process by positive influences. A study by Kirkwood (2009) found that the desire for independence was a major pull factor and the differences between men and women were minimal. In the same vein, Stokes & Wilson (2010) cited a desire to exploit opportunities, turning a hobby or previous work experience into a business and financial incentives as some of the major pull reasons behind entrepreneurial motivation. Push factors, on the other hand, explore negative reasons influencing entry into entrepreneurship. Gibb & Scott (1986) found redundancy, unemployment and disagreement with previous employers to be some of these push factors.

2.4 Entrepreneurial Process & Effectuation

The entrepreneurial process involves two sub-processes which are *discovery* and *exploitation* of opportunities (Davidsson, 2003; 2004). Discovery deals with the process of coming up with ideas for business development while exploitation is concerned with the realisation of those ideas (Shane & Venkataraman, 2000). However, as Davidsson (2003, 2004) noted, the discovery and exploitation processes are not always linear and do not guarantee success. Davidsson (2003) found that the discovery of business ideas was often the result of three search processes - proactive, reactive and fortuitous discovery. Research has found that aspiring entrepreneurs do not search randomly for ideas but often draw from prior knowledge, drive and expertise (Klofsten, 1994). The discovery and exploitation of opportunities involve a number of steps which are things that need to be done to establish a business. Davidsson & Klofsten (2003) distil these down to a series of steps. As Davidsson (2003, 2004) noted, uncertainty surrounding the entrepreneurial process makes it hard to develop a systematic procedure, but he does not disregard the role of planning. Different circumstances, he opines, dictate the entrepreneurial process.

Brinckmann et al. (2010) only found a mild degree of success when entrepreneurial processes were planned out for small businesses and less so for start-ups.

Sarasvathy (2001) offered effectuation as an alternative logic, which is the opposite to a causation logic. Effectual entrepreneurs take a set of resources as given and focus on selecting possible effects that can be created with them. According to effectuation principles, the entrepreneur starts with given means - bird-in-hand principle. It also looks at affordable loss as opposed to expected return, strategic alliances rather than competitive analysis, adaptability to changing circumstances rather than sticking to pre-planned routines, and finally controlling the future rather than trying to predict it. This study tries to identify if teacherpreneurs adopt an effectual or causal approach to entrepreneurship.

2.5 Digital Entrepreneurship, ICT & Internet Born Globals

According to Porter (2001), the internet is an enabling technological platform that lowers the barriers to entry and can be used wisely or unwisely by entrepreneurs. In this vein, Matlay & Martin (2009) state that advances in Information and Communication Technologies (ICT) facilitate the growth of small businesses in the digital economy. It is against this backdrop that digital entrepreneurship has risen significantly. Hull et al. (2007) define digital entrepreneurship as entrepreneurship in which some or all of the ventures take place in the digital economy as opposed to more traditional economies.

Digital entrepreneurship has the potential to produce internet born global start-ups. A born global firm, according to McDougall & Oviatt (2000), is a 'business organization that, from inception, seeks to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries.' Given the global nature of the internet platform, teacherpreneurs are empowered by ICT to reach audiences beyond local borders, leading to internet born global start-ups (Bell & Loane, 2010). Since global reach is a major characteristic of e-businesses, it makes sense to explore teacherpreneurship in the online K-12 industry from a global perspective.

3 The Online K-12 Industry

3.1 Online K-12 Industry & Opportunities

Global Silicon Valley (GSV) Advisors (2012), reports that worldwide education expenditure reached 4.4 trillion in 2012. The report also stated that since 2000, the cost of education has risen sharply to 84% with a mismatch in quality. This rise in cost is creating problems of access in the education industry, with 700 million of the world's learners projected to lack basic literacy skills by the end of 2015, according to IBIS Capital (2012), a London investment firm. This depressing picture is contrasted by an 870% rise in global internet usage since 2000 to over 2.8 billion users and a 257% tablet usage in the US alone (IBIS Capital, 2012). Technology greatly reduces the cost of education and underpins the drive towards e-learning.

Porter (1980) stated that industries may follow an imperfect *S-curve* trajectory from introduction, growth, maturity to a decline stage, with the growth stage offering several opportunities for entrepreneurs. Based on several frequently cited reports (IBIS Capital, 2012; GSV Advisors, 2012; Docebo, 2014), the online e-learning industry, is at the growth stage with a 23% five-year compound average growth rate (CAGR) until 2017 (IBIS Capital, 2012; Ambient Insights, 2011). Within the e-learning industry, Docebo (2014) reports that K-12 education alone takes up a sizeable 50% of the global e-learning market with a higher CAGR of 33% due to its large user base. In this vein, a report from GSV Advisors (2012) projects that the global K-12 market is poised to reach \$69 billion by 2017. The report also indicates that gamification tools and mobile tablets provide opportunities in the K-12 industry with a higher CAGR of 37%. It is the reason Pearson, a major player, has put education technology solutions at the centre of its growth plans (Docebo, 2014). What these industry reports consistently show is that at the systemic level, opportunities abound for entrepreneurs looking to enter online K-12 markets.

3.2 E-Learning Industry Structures, Markets & Key Players

One of the seven sources of innovative opportunity, as identified by Drucker (1985), is at the level of industry and market structures, whereby changes offer opportunities to innovators and a threat to those who read the changes wrongly. Within the K-12 industry, IBIS Capital (2012) maps out the following industry structures in online learning content providers, management systems, distribution channels and the customer. Content involves the provision of materials that are used in learning. As such, publishers of content are key players who address the needs of the entire education industry. Because technology is enabling new forms of content like apps, e-books, videos and games, big content providers are forced to adapt. These players include the likes of Pearson, McGraw Hill Education and CENGAGE Learning. Providers of content authoring tools include the likes of Adobe, Articulate and TechSmith. In the market for management systems, top Learning Management Systems (LMS) providers include Moodle, Blackboard and Docebo. According to reports from Docebo (2014), the market for LMS has seen a rise in cloud systems and social learning platforms like Edmodo and Schoology. Software as a service (SaaS) has come to symbolise much of the changes taking place in cloud models. SaaS lowers costs for start-ups as such systems scale with the business needs. Within cloud LMSs big data analytics have been featured that help businesses understand customer behaviour. Most cloud and SaaS systems have come of age and are being developed with small businesses in mind. For instance, it is not uncommon for SaaS systems to have subscription business models included. Key players in the SaaS LMS space include the likes of Absorb LMS, Docebo LMS and Litmos (Docebo, 2014).

Distribution also forms a key part of the e-learning industry structure. Distributors are the link between content creators and customers. Businesses in this domain include Massive Open Online Courses (MOOCS) like Coursera and Khan Academy (IBIS Capital, 2012). Equally noteworthy are marketplaces like Google Play, Apple's iTunes and Amazon which are among the most recognised content distribution channels for e-books, apps and audio-visual content. In this light, the falling costs of PC and mobile devices increase the demand for e-learning across multiple platforms (IBIS Capital, 2012).

The customer is the final and key element in the industry structure. Rising demands for e-learning has increased across the globe. In the US for example, only 4% used e-learning solutions in 1995 but the figure stood at 77% as of 2012 (GSV Advisors, 2012). Demand is expected to grow by region, buoyed by rapid growth in internet penetration across Asia and Africa, and falling prices of personal computers. In Europe, over 3000 e-learning companies have sprung to meet this rising demand as opportunities abound for entrepreneurs (IBIS Capital, 2012; Ambient Insights, 2011; Docebo, 2014).

4 Research Methodology

This is an *exploratory* study, which according to Saunders et al. (2012) is concerned with providing new insights, asking new questions and assessing topics in a new light. As a result, its conclusions are presented with extreme caution with relation to generalisations. To come up with a well-rounded research finding, this study follows the coherent logic of the 'research onion' as put forth by Saunders et al. (2012, p. 160). The research onion, from the outside, starts with the research philosophy and peels away through to data collection and analysis.

4.1 Research Approach

An *inductive* research approach was necessitated by the fact that the study seeks to develop a richer theoretical perspective than already exists in the literature; and it also provides a context of the phenomenon being studied (Saunders et al., 2012). An inductive approach works with qualitative data in combination with a variety of data collection methods (Easterby-Smith et al., 2012). However, the research hints at theoretical possibilities of teacherpreneurship based on existing literature, thus leaving room for *deductive* reasoning also.

4.1.1 Multiple Case Studies

This study is based on three teacherpreneurs in the online K-12 industry. According to Yin (2014), the choice of multiple case studies depends on whether the findings can be replicated across cases. In this vein, Farquhar (2012), states that the strength of a cross-case study lies in its ability to offer researchers the chance to compare and

contrast cases, as well as explore a phenomenon in a number of different cases. It is the reason Eisenhardt & Graebner (2007) argue that multiple case studies provide a stronger basis for validity, a more compelling evidence and better grounds for theorising about a phenomenon.

4.1.2 Selecting Cases

Eisenhardt & Graebner (2007) suggest that a case be considered based on the conceptual framework upon which the study is founded and should replicate or extend emergent theory. Flyvbjerg (2006) suggests an information-oriented approach to choosing cases. It is along these lines that the cases for this study were processed. The cases had to be K-12 teachers whose entrepreneurial ventures were geared towards various structures of the online K-12 industry. These teacherpreneurs also have different teaching backgrounds, come from different countries and are of various ages. The study also insisted on having at least one female teacherpreneur. The diverse selection criteria were designed to eliminate potential threats to validity.

4.2 Data Analysis Strategy

An inductive strategy using grounded analysis to identify emergent insights was adopted. With this method, all data are first collected and coded, followed by the search for emergent patterns as the basis for theorising (Corbin & Straus, 2014). The coding process worked by anchoring key categories back to the research question, objectives and literature review, from whence came the topics. The key topics were grouped into two broad categories — motivation and process. Topics under motivation sought to answer the *why* of the research question while topics under process attempted to answer the *how*. From the categories and topics came interview questions that were adapted for all cases. With relation to techniques used in the analysis, a cross-case synthesis was chosen, as a result of adopting a multiple case study strategy. This approach treats each case as a separate study. Finally, the three different cases were analysed for patterns that replicate or contrast each other (Yin, 2014).

5 Findings

5.1 Cross-case Comparisons

The comparisons found in Tables 1 & 2 illustrate the findings from the cross-case analysis conducted in this study.

Table 1: Cross-case comparisons of teacherpreneurial motivation

Topics	Case 1	Case 2	Case 3
Push factors	Negative factors did not influence entry	Negative factors influenced entry – disliked school teaching methods	Negative factors did not influence entry
Pull factors	 Achievement & intrinsic motivation – finds process self-fulfilling 	Achievement motive partly influenced entry	 Intrinsic motivation in sharing resources as a hobby
Personality traits	Persistence & patience drive performance	Discipline and tenacity drive performance	Determination & creativity drive performance
Cognitive models	Teaching experience forms core competencies & capabilities Ability model – skills combined with intrinsic motivation driving performance	Teaching experience crucial Desire for autonomy & dislike of external control Ability model – skills combined with intrinsic motivation driving performance	Teaching experience crucial Ability model – skills combined with intrinsic motivation driving performance
Opportunity	Not opportunity influencing entry, search was fortuitous Opportunity awareness became a later motivation driving performance	Opportunity influenced entry as he saw need to solve problems in traditional education	Not opportunity influencing entry, was fortuitous search as a hobby became a business Opportunity awareness became a later motivation

Table 2: Cross-case comparisons of the teacherpreneurial process

Topic	Case 1	Case 2	Case 3
Linear causal	Process non-linear, no evidence of causation	Process non-linear, no evidence of causation	Process non-linear, no evidence of causation
Effectuation	Effectual logic: bird-in-hand, affordable loss and pilot-in- the-plane principles evident, no business plans, bootstrapping, fortuitous discovery	Effectual logic: bird- in-hand, affordable loss, pilot-in-the-plane principles evident, no business plans, imagines goals, bootstrapping	Effectual logic: affordable loss, bird- in-hand principle, bootstrapping, no business plan
Opportunity Discovery	Actions of the teacherpreneur led to fortuitous discovery and exploitation of systemic opportunities	Aware of systemic opportunities but actions of the teacherpreneur led to fortuitous discovery and exploitation	Actions of the teacherpreneur led to fortuitous discovery and exploitation opportunities
Context	School environment positively encouraged entry School context enables teacherpreneurs to develop skills that form core competencies	Pressure from negative environment led to idea generation school environment necessary for developing skills	 Family context teaching of nephews and nieces led to the development of skills that formed core competencies
Growth factors & measure	Internal as coming from actions, decisions & personality of the entrepreneur Growth also external: ICT-enabled internet bornglobals Measured in terms of finance, personal reward, site traffic, employees, self-fulfilment Age, level of education may have played a role	Internal decisions and personality of the teacherpreneur Technology-enabled external sources of growth Measured in terms of increase wealth, freedom and self-fulfilment Age, level of education may have played a role	Result of internal decisions and personality of the entrepreneur Growth is facilitated by ICT Growth measured in terms of revenue increase and site traffic Age, level of education may have played a role
Failure	ICT a 'creative destroyer' of business	ICT a 'creative destroyer' of business	ICT a 'creative destroyer' of business
Marketing	Word of mouth at first Later facilitated by ICT No evidence of use of marketing mix	Word of mouth & tour at first Later facilitated by ICT No evidence of use of marketing mix	Word of mouth at first Later facilitated by ICT No evidence of use of marketing mix
Technology (ICT)	 Enabler, destroyer, cost reducer, creator of opportunities 	 Enabler, destroyer, cost reducer, creator of opportunities 	 Enabler, destroyer, cost reducer, creator of opportunities

6 Conclusions

6.1 Implications for Industry & Society

The idea of teachers creating for-profit business ventures for themselves is a controversial subject with some fearing that a financial incentive might take precedence over educating society as a public good. This study indicates that financial success is only a bridge to realising the true goal for entry into education. The findings also signal that the proliferation of online teacherpreneurship is another manifestation of the on-going disruption of the traditional education industry by ICT. Teacherpreneurs, it appears, are self-driven teachers who refuse to have their wings clipped by traditional school environments and harness technology to gain autonomy. This might mean that if school environments become restrictive to teacherpreneurs, they may take their passion for education to virtual environments, leaving classrooms behind. Such a move might indicate a shift in the balance of power in the education industry which has both positive and negative implications depending on different perspectives

6.2 Limitations

This research hoped to obtain findings based on a variety of teacherpreneurial ventures that represented the main structures of the online learning K-12 industry – content, management platforms and distribution channels. However, findings became limited to the cases who agreed to participate in in-depth interviews. A number of potential interviewees turned down requests for interviews. Nevertheless, enough primary data was collected from the three case studies, whose ventures mostly targeted the content segment of the industry. As noted, content providers address the needs of a cross section of the e-learning industry and are thus capable of providing valuable insights into the entire industry.

6.3 Conclusions

As online learning continues to cannibalise traditional education, teacherpreneurs may be inadvertently creating new roles for teachers as redundancy or attrition becomes an inevitable consequence of such a disruptive process. Teacherpreneurs in online K-12 markets are involved in productive entrepreneurship (Baumol, 1996) which creates value for society while capturing some for themselves. This research provides a starting point for other teachers who may be contemplating a teacherpreneurial path. Teachers should be encouraged to pursue a teacherpreneurial route that lets them assume leadership roles in solving problems in the education industry. Digital teacherpreneurship can amplify rather than diminish the role of the teacher in society as an educator and generator of socio-economic value.

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