



Characteristics of entrepreneurs who experience dyslexia: an interview study on the role of school in supporting an entrepreneurial mindset

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ABSTRACT

In this study, 17 students who experience dyslexia, and were engaged in a business studies course at degree level or above were recruited from two Universities to participate in this semi-structured interview study on entrepreneurship. The four questions addressed included their strengths and characteristics, the obstacles they anticipated, and what further skills they needed to fulfil their aspirations. The results suggested that these students shared many of the characteristics of entrepreneurs who experience dyslexia noted in the literature, including determination, communication, people skills, and the capacity for risk taking. Moreover, that obstacles to their success related primarily to their lowered confidence in the face of failure. The comments indicated that these students were realistic about their ongoing needs to fulfil their business aspirations, and saw a stronger role for school at all stages in preparing students for an entrepreneurial future. Practical aspects and group projects, rather than a purely theoretical approach in education, were highlighted as key here, enriched with relevant experience of both successful and unsuccessful entrepreneurs, to endow this group with the knowledge that failure could be an important tool in learning throughout education and working life.

Keywords: Entrepreneurs, dyslexia, tertiary students, confidence.

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INTRODUCTION

Entrepreneurship education has proliferated internationally over the last few years since the inception of this movement in the 1980s but a number of questions remain unanswered. Entrepreneurs have been recognised across the world as a major solution to the constraints of employment in the 21st-century, taking a positive spin on the lack of secure employment as a starting point for encouraging innovation and enterprise as an alternative approach to establishing a career. In the UK, (Young, 2014), the USA, (Mead and Rotherham, 2008), as a priority in the Europe 2020 strategy, (SEECCEL, 2016), Africa, (Herrington and Coduras, 2019), and Asia (Tan, 2012) policy papers have been published and emphasised as a way forward to achieve the maximum employment for a whole range of young people, creating an environment in which entrepreneurs should thrive.

At the same time, a greater concentration on a model of sustainable innovation has become key to success internationally, with the United Nations publishing sustainable development goals, (United Nations, 2016) that have been adopted by 193 countries, leading to a continually growing need to focus on the three factors involved, the environment society and the economy, within a sustainable innovation model (Stock et al., 2017). This model has been based on the so called 'fuzzy front end' innovation, (FFE), featuring innovation drivers, led by motivation and the willingness to motivate others, leading to creativity, encompassing innovation capacity, and knowledge, which has been called the essence of innovation. Stock and colleagues (2017) note that the FFE process involved requires the exercise of problem detection, analysis, and a range of solutions, before focusing on the selected solution. A specific mode of thinking and problem solving is needed here, which is typically expressed in entrepreneurs within every society.

A key factor here is the employment of an enterprise entrepreneurial education at all levels in education but the literature suggests that this has been more successful in tertiary education than in the early stages of primary and secondary education. In the UK, for example, the emphasis on academic subjects militates against the development of entrepreneurial skills within a business environment in the individual school. Consequently, although lip-service may be paid at government level to the importance of entrepreneurial skills, in reality the opportunities for the development of these skills have been limited by adherence to a more academic curriculum. The question therefore arises, "how can more be done to create a positive environment for development of entrepreneurial skills within schools at all levels and in all countries?".

In this article we attempt to address these issues by soliciting the views of a specialist group of students with dyslexia, with an interest in entrepreneurial success. It is important to recognise why this particular group of students may have a specific contribution to make in the area of entrepreneurial education. Research over many years has suggested that dyslexic adults may have a specific tendency towards adopting an

entrepreneurial career. The initial research by Logan (2009) showed significantly more entrepreneurs in a US group than in corporate management (35% vs 1%), although it should be noted that the study has been widely critiqued because these individuals had not been formally diagnosed with dyslexia, but were simply screened with an adult checklist. This has led to a range of further studies, inspired by many anecdotal case studies of entrepreneurial skills in dyslexia (see for example West, 2009).

However, a large-scale study in the Netherlands, (Hessels et al., 2014) concluded that there was no evidence for greater incidence of entrepreneurship in dyslexia in a sample of 3319 Dutch entrepreneurs between the ages of 18 and 65. It should be noted that the definition of dyslexia in Hessels and colleagues study was broader than usual, including reading and comprehension difficulties of all types. There was, however, evidence that dyslexic individuals were more likely to be male, and less well educated, lower earners, both of which have been associated with an interest in entrepreneurship, as well as more likely to be an early stage entrepreneur than an employee, but this last finding was only significant at the 10% level, representing a trend rather than a clearly significant statistic. Interestingly, Vega and colleagues, (2016) note that an appetite for entrepreneurship is more prevalent in the young aged 40 or less, with a decrease in willingness to engage with risk taking with age, which might explain the pattern of results in the Hessels et al. paper. Nevertheless, the escalating interest in entrepreneurship and dyslexia has led to the forthcoming publication of an edited book on the topic (Pavey et al., 2020 in press) with the material here drawn from a study by Meehan et al., (2020) on the experiences of a group of dyslexic university students, their characteristics, and the impact if any, that schools might have in the process of creating an entrepreneurial mindset.

CHARACTERISTICS OF AN ENTREPRENEUR

One of the key issues here is what constitutes an entrepreneur, in particular the characteristics that have been attributed to entrepreneurs more generally. Dollinger, (2006), in the 4th edition of his influential book, considered the following elements to be characteristic of entrepreneurs, based on an analysis of changing definitions since the early 1920's. Creativity and innovation head the list, resource identification and marshalling, economic organisation, and the opportunity for gain under risk and uncertainty. Allen (2006) noted that a mindset or way of thinking that was opportunity focused, innovative and growth orientated was required. Sensitivity to change and the willingness to grasp opportunities as they present also factor as key requisites to be an entrepreneur, in addition to dealing with the unexpected and incongruous and identifying need. In the process of becoming successful, many entrepreneurs will pursue a wide range of projects that fail to reach fruition, and it would be unusual to instantly achieve success in the first venture adopted.

CHARACTERISTICS OF INDIVIDUALS WITH DYSLEXIA

In terms of the characteristics of individuals who experience dyslexia, the literature suggests a wide range of overlaps that characterise entrepreneurs with dyslexia, that go some way towards explaining the association between the two. First and foremost, the association between dyslexia and creativity has been most widely endorsed, although it must be said that attempts to prove these links experimentally have produced inconsistent findings. One of the earliest proponents of strengths in dyslexia (Vail, 1990) described it as either a strength or a bane, based on divergent thinking, seeking open ended rather than set answers, and concentrating on these to the exclusion of all else. Wolff and Lundberg (2002) attempted to unravel the links with creativity in dyslexia, with a comparative study of art students with dyslexia and matched controls. They concluded that the elements contributing to a greater incidence of students with dyslexia in this group (around 3 times higher than in the controls) were hard to pin down, and may relate to difficulties in more academic subjects. Everatt and colleagues undertook a series of studies to try and identify higher visuo-spatial abilities in 62 students aged between 18-55, and found (Everatt, 1997) evidence for greater verbal fluency and ability in visual picture construction, although this pattern of visual strengths was not evident in a later study of school children. A further study with a smaller group of students with and without experience of dyslexia identified higher self-reported creativity, problem-solving and decision making in the group with dyslexia (Everatt, Steffert and Smythe, 1999). These self-perceptions were confirmed in the same study by tests where insight was required to resolve a range of problem-solving tasks.

By contrast, a study from Lockiewicz, Bogdanwicz and Bogdanwicz, (2014) found no evidence for greater strengths in visual and creative skills, but noted the influence of personality and motivational factors to be heightened in adults who experienced dyslexia. However, even the incidence of higher visual spatial abilities has been questioned, based on a recent review (Gilger, Allen and Castillo, 2016) and a meta-analysis (Chamberlain, Brunswick, Siev and McManus, 2018), which found greater heterogeneity in individuals with dyslexia, with performance reflecting both high and low abilities. This may relate to some extent to the widespread use of university students as representative of individuals with dyslexia, when they may represent only those who have proved more successful in achieving academic qualifications. In the study reported in this paper, a similar group of university students who experience dyslexia will also be used, which naturally restricts the conclusions to be derived, because these students are at the start of their careers and can only show incipient evidence for entrepreneurship. Nevertheless, they can provide some critical evidence on the attitudes and motivation of this age range, and how closely their skills can be linked to those of entrepreneurs.

Turning now to the characteristics of school-age children who experience dyslexia, this can be largely obscured by their difficulties in achieving within an environment which emphasises the very skills with which they struggle, namely, all aspects of literacy,

memory, speed and organisation. Opportunities for them to express their creativity, and divergent thinking may be limited by the increasing demands of an academic curriculum, and there is no doubt that the feelings of failure engendered by the school environment can impact severely on the self-esteem and capacity for creative thought in this group. A recent study that provided evidence in support of this contention undertook the Torrance test of Creativity with children who experienced dyslexia drawn from a range of schools, including those that provided specialist support for dyslexia. The results indicated significantly higher scores on fluency, flexibility (the number of categories suggested) originality and elaboration, in the students from the specialist units, with a critical age for the development of creative skills between 10-15 (Kapoula et al., 2016). In these units, students were encouraged to make their own decisions, follow their individual interests and discover their abilities and limitations. Unfortunately, this is precisely the age group where education in the UK now focuses almost exclusively on examination results, particularly for those in the higher age range. It is not clear from Kapoula and colleagues' study whether it is the broader curriculum of the specialist units, or the greater understanding of the strengths and weaknesses of children with dyslexia that contribute most to these interesting results, which may be related to the increased self-esteem and feelings of competence in this group.

In order to identify the specific components of creativity in which students with dyslexia excel, a study by Cancer and colleagues, (2016) in Italy, found that it was the connecting of disparate ideas in which the group studied showed significant strengths in comparison with controls. Interestingly, in a second study forming part of the same article, the authors applied the same tests to a larger group of students who experienced dyslexia, and established a highly significant negative correlation between accuracy in reading and this connective strength. A trend towards slower speed in reading was also identified in the group who flourished in making these connections. Of course, correlation does not indicate causation, but the combination of these two experimental studies provides strong suggestive evidence for a negative link between the two skills. Interestingly, a study with a large group of 95 younger children with dyslexia aged 9-13 (Bigozzi et al., 2016), in comparison with controls, showed significantly greater originality and elaboration, although no evidence for greater flexibility in this age group. This may suggest that the development of flexibility may depend on age, or may even be dependent on the type of education received, favouring a constructive approach to dyslexia.

In terms of three other characteristics identified by Dollinger (2006), economic organisation may be the least representative of adults who experience dyslexia, given the known difficulties in memory and organisation widely associated with dyslexia, and there is little scientific evidence available on resource identification and marshalling. Nevertheless, Nicolson (2015) in a series of interview studies with successful adults and students who experience dyslexia, identified a range of social skills that characterise this group, based on strengths in teamwork, empathy and communication, as well as the

cognitive skills of big picture thinking, creativity and visualisation. For the successful adults who experienced dyslexia, (Nicolson, 2015) 87% showed the work strengths of determination, 75% resilience, in terms of cognitive strengths 87% shared a Big Picture approach, and 62% innovation and creativity. Finally, in terms of Interpersonal strengths, 62% showed teamwork and 75% empathy. Interestingly, for the students in Nicolson's studies, it is determination, proactivity and flexible coping which represent their strongest work strength skills, although many of the other entrepreneurial skills have yet to develop with experience. These characteristics have also been highlighted by Eide and Eide (2011), in aspects of their analysis of Material and Interdisciplinary reasoning, with particular strengths in interconnected reasoning, based on spotting links between seemingly unrelated areas, as well as dynamic or intuitive problem solving and anticipation of future developments. Success as an entrepreneur may relate to identifying opportunities, and building a team of people who can collectively deliver on those opportunities. A study from Sepulveda, (2014, see also Sepulveda and Nicolson, 2020 in press) corroborated many of the attributes of entrepreneurs who experience dyslexia identified by Logan (2009) adding some further unique traits, including recognising the need to ask for help, based on modesty, and the important role of the family in creating entrepreneurs.

Tolerance for risk can be related to experience of failure, which in the more successful adult with dyslexia can lead to a spirit of resilience and optimism, as a series of studies by Alexander-Passe has indicated (e.g. Alexander-Passe, 2016). In this article, family factors were identified as crucial to success, and the respondents reported a traumatic experience of school, characterised by avoiding the teacher's eye, coupled with motivation to express strengths elsewhere, as well as the tolerance for risk that characterised entrepreneurs. This author has also identified traits of post-traumatic success in the adults he has worked with who experience dyslexia, (Alexander-Passe, 2017), and it may be this tolerance for failure, based on repeated experiences of struggling in school, which makes entrepreneurship attractive to this group, as well as the difficulties in becoming an employee, based on the idiosyncratic pattern of strengths and weaknesses which may preclude success in a more traditional employment environment. Conversely, the well-known overlap between dyslexia and ADHD in children, (52%, Kaplan et al., 2001) which is not typically addressed in adults who experience dyslexia, may endow this group with an appetite for risk which can be most easily satisfied by engaging with an entrepreneurial career.

ENTREPRENEURSHIP IN EDUCATION

Despite the movement towards entrepreneurship as a key element in education across the age range, the majority of the research has been conducted with adults, particularly within the University sector internationally. Indeed, it has even been argued that entrepreneurship may not even be a teachable concept (Marram et al., 2014). In terms of the literature on entrepreneurship education, a comparative study of entrepreneurship

education with lecturers (Logan, 2008) suggested that the techniques usually employed based on lectures and case studies are those likely to be least accessible to those who experience dyslexia, that do not develop their skills. The role of a mentor, often the father in this study, seemed to be crucial, and the entrepreneurs with dyslexia, showed greater tolerance for high risk and involvement in more than one enterprise, as well as greater use of delegation. Recommendations included increased emphasis on mentoring, action learning and a more practical holistic approach. Motivation to include entrepreneurship ranges from a narrow perspective of encouraging students to start up their own business, to the more nebulous ambition of inspiring a more creative approach. These two extremes are exemplified by the UK approach of enterprise education, versus the US approach of entrepreneurial education (Lackeus, 2015). A theoretical approach is most commonly used in higher education, whereas a more experiential approach can be beneficial in terms of motivating students through involvement in practical applications, possibly across the curriculum in younger children.

A concrete example drawn from one of the universities involved in the current study was an impact report published in 2019, (Student Enterprise and Entrepreneurship impact report, 2019) and made available to all staff and students, with an initiative covering the period 2018-2023. At this early stage of the programme, 40 students started businesses, 50 students led the approach across the university, over 9000 students were engaged, and over 1500 students participated in entrepreneurial learning and skills development opportunities, achieving both national and international recognition. However, the report does not attempt to differentiate between students who experience dyslexia, and those who do not, and this it is not possible to conclude how many of these students have become involved in this initiative.

A series of recent large-scale studies from Spain have thrown considerable light on the most useful approach for older secondary school students. Garrido-Yserte, and colleagues, (2019) examined the motivation and determination to succeed, precursors of an effective entrepreneur, in a questionnaire study of 897 secondary school students aged 16-19. The results (Garrido-Yserte, Crecente-Romer, and Gallo-Rivera, 2019) demonstrated large numbers of female students with the potential for entrepreneurship, with empathy and communication key, as well as confidence in presentations, but further work needed on the ability to work within a team. A similar study with nearly 4000 subjects (Vega et al., 2016), found a more equal balance in gender, with immigrants more likely to engage in entrepreneurial tasks, as well as those who achieved lower performance. This study advocated the need for more emphasis on innovative, imagination and creativity, as well as the experience of engaging with entrepreneurs more widely, in order to encourage this type of career in a region of high youth employment. Finally, another large-scale study of 1244 15-year old students (Rosique-Blasco, Madrid-Guijarro and García-Pérez-de-Lema (2016) identified the opportunity to cultivate an entrepreneurial attitude, be proactive, innovative and learn to handle situations of uncertainty as significant factors in success for this age group.

However, in the UK, the Company Programme for Young Enterprise covers the full age range of secondary schools, from 11-18, and now reaches nearly 16,000 participants in nearly 1000 centres, with 30% of these targeting areas of multiple deprivation, in an effort to restore the economic balance to these regions through changing the mindset of pupils. The Enterprise Education Planning Framework for schools addresses the knowledge, skills and attitudes in 9 core components, problem solving, communication, teamwork, resilience, confidence, initiative, organization and creativity, with financial capability in a separate planning framework. These competences can be used to evaluate starting skill, measure progress, and to support teachers in their understanding of what constitutes enterprise and how to incorporate this within the curriculum.

In a recent Company Impact Report, (2017) which sets out to measure these competencies, plus aspirations and work readiness, 72% of students assessed improved in more than 4 competencies, with greatest improvements in work readiness and self-esteem, a 7% increase overall. Teachers and volunteers also expressed satisfaction 88% recognizing that the programme improved students' knowledge of their strengths and weaknesses, 86% that it improved students' employability skills, and 70% their career aspirations. Over 90% of the volunteer business advisors recognized that the programme had contributed to their ability to challenge and motivate others, sharing their career experience to the advantage of all involved. Further aims include the development of self-reflection to make the approach more meaningful to all those involved. Further studies in Mexico (Carcamo-Solis, et al. 2017) and the Netherlands (Huber, Sloof and Van Praag, 2014) have shown the potential for structured experience with entrepreneurship programs, suggest a positive impact on non-cognitive skills in older primary children aged 11-12, however, literature on this age range remains limited.

By contrast, any entrepreneurial involvement reported in the literature in primary school tends to be in the older children aged 11-12, and thus already on the cusp of moving to secondary school. A good example would be the Mexican study on My first enterprise with this age range from Carcamo-Solis and colleagues (2017) which established a number of mini-companies over several years, including food, jewellery, and craftwork, amongst others. A further study from Huber, Sloof and Van Praag, (2014), with this age group showed that entrepreneurial training with BizWorld in a large sample improved the non-cognitive entrepreneurial skills typically associated with entrepreneurs, although knowledge of entrepreneurship remained largely unaffected.

In summary, studying the literature on entrepreneurship education, and considering the putative links between dyslexia and entrepreneurship, suggests the need for further evidence on this topic. Students who hold an accredited professional diagnosis of dyslexia could play a key role in developing our understanding of the characteristics of entrepreneurs, as well as the role of schools in facilitating this link. This provides the motivation for the study presented here, on the potential of schools in this respect and how this could be strengthened. The study was undertaken with business students who declared an intention to start up a business, after further experience or training.

METHODOLOGY

The information gathered here was obtained as part of a larger semi structured interview study (Meehan et al., 2020 in press) conducted by the authors. The questions and their responses described in this article were not addressed in the published material to date.

The interview questions were as follows.

1. What do you see as your strengths and qualities re your aspirations?
2. Do you see any obstacles to be overcome in your plans and aspirations, if so please could you tell us what they might be?
3. Are there any specific skills and/or techniques that you believe you need to develop/learn to fulfill your aspirations?
4. What about business sense, enterprise, entrepreneurship - what would be the right sort of support, or lessons in school?

Participants

Students who experience dyslexia, and were engaged in a business studies course at degree level or above were recruited to participate in this semi-structured interview study. Students from two Universities participated, one set in inner-City Wales and another in a rural area of England. Selection of the Universities was opportunistic, and dictated by the geographical placement of the authors participating. However, it should be noted that in Wales, students would have benefitted from the Welsh young enterprise initiative from 2010-2015, (Welsh Assembly Government, 2010), when the majority of these students would have been in secondary schooling.

Invitations to participate were distributed by e-mail to students who had self-declared as experiencing dyslexia. All students participating held a formal diagnosis of dyslexia, and received the Disabled Students Allowance Interviews were recorded, transcribed and analysed based on an adapted phenomenological approach (Hycner, 1985) and validated by two colleagues. The project met the criteria for the Ethical Committees of both Universities, as well as the requirements of BERA (2004). Participants were given the right to withdraw at any time and assurances that confidentiality and anonymity would be ensured.

10 males and seven females took part, with the majority (12) completing their undergraduate degree, spread across the full range of years one to four. The remainder were drawn from the Postgraduate schools of the two universities. Their age range was 18-33, with the majority under 30. 15 participants had been educated within the UK system.

RESULTS

It was interesting to note that no one question was addressed by all the participants, although a number of key themes emerged. In the sections that follow, these are highlighted, with attempts to incorporate comments that could be seen as somewhat oblique or tangential to the question, in common with the responses of many adults who experience dyslexia. Within the broad key themes, which shared some common ground, the term 'unique themes' is used to describe comments contributed by an individual.

Question One: What do you see as your strengths and qualities re your aspirations?

In terms of strengths, a clear consensus emerged, which noted that respondents were determined, had people skills, organised, efficient, self-motivated, possessed key skills, logical, practical, possessed 'out of the box thinking' and were inventive/creative, good at maths and stats, and able to take risks.

Determination

Students who experienced dyslexia in this study thought they were determined, although this was also re-interpreted by one student as stubbornness,

"quite good at coming up with ways around things. If I could not go straight to something, I would find a different route through".

Determination was also equated with being focused on a goal. This was summed up by one student as:

"not giving up even though you have failed the last hundred times - prepared to work hard, don't mind doing long days, prefer to work slowly and work longer than others to absolutely smash it for 9 to 5."

Unique themes which were linked to determination included being very focused and being able to "weather the storm". Allied to determination, one student was quite confident.

People skills

A number of the respondents thought they had good people skills. This was defined variously as ability "to get on with people"; to have "good social and communication skills", ability "to talk to people" and work with people. One student thought that delegating was a strength. This was also framed as a necessity in order to avoid writing because, as one student commented, they "much preferred to have a dialogue". Although it was also noted by another student that social skills themselves could "be a challenge".

One student enjoyed working in a team, while another highlighted,

“networking with people in the industry and having good leadership skills”.

Personality was thought to be important, and the ability to motivate others, as well as to self-motivate. One student made this observation, and put this down to an ability to motivate other workers,

“always knew I could [motivate others] - evident when managing a team of 20 who did not speak good English and yet we were the top team of the month for meeting production and target costs, only beaten once over a period of 5-7 years”

Organised and efficient

Respondents thought they were organised, with comments related to organisation including time management and meeting deadlines, they were efficient, that is, able to find *“efficient ways to do things”* and to research for information in order to, *“make the most profit”*.

A unique theme from one student was the following,

“pretty good at taking an idea and working out how to implement or just work out a quicker way of doing something”.

This might also be interpreted as innovative (see below).

Practical

Respondents thought they were practical, were a *“hands on person”* and would learn kinaesthetically because when, as one student noted,

“learning [something] in lectures, I may get it or may not, but if I was actually doing it... it ‘clicks’ better with me”.

In the section ‘any other comments’ another student commented:

“I had a friend who experienced dyslexia who was in the same small group last year for a business strategy assignment brief, and their interpretations were different. I found that both my friend and I would interpret the assignment brief one way and the rest of the group [who did not experience dyslexia apparently] seemed to interpret it another. We would look at it with more of a practical approach whereas people without dyslexia took a more theoretical approach.

This student considered that this could just be something they had “*generally noticed*” but it was something that cropped up. It is interesting to note that the assumption here from this student was that if someone did not disclose their dyslexia, they did not experience it.

Inventive/creative and Out-of-the-box thinking

Respondents thought they were inventive/creative, and one student commented:

“good at key sort of strengths, quite inventive, like inventing things, making things and fixing things and consider myself to be creative”.

Another student stated,

“think that I have quite good ideas, and good at Out-of-the-box thinking or alternative thinking with the ability to see something from a different point of view”

A third student noted that,

“A holistic approach to things was useful sometimes”.

However, one student also recalled the following:

“a famous quote that says... if people are lazy they find better ways of doing things, which was something to do with being lazy at heart”.

Logical, Analytical and Mathematics/Statistics

Respondents thought they were good at logical thinking, and one student commented:

“Good at analytical skills, analysing data and graphs”.

In addition, two students thought they were good at mathematics or statistics. By contrast, some students, discussed further below in Question Two saw a lack of these skills in themselves as an obstacle to successfully setting up a business.

Key skills for business or having a business mind

Two respondents thought they were good at the key skills needed in the area they wish to start a business in. Such skills included, for example;

“producing and running a production line, carrying out quality control measures as well as being good at the key sort of strengths”.

Two other students thought they had a “*business mind*” because of the way they made decisions, for example, in a certain business scenario, one of these students noted that they did not shrink from making tough decisions, “*I’m quite good at sort of saying ‘Yes’... ‘No’*” which was quite important. Another student said they definitely had management qualities, liked learning things and knew that with building a new company from scratch there would be a huge amount they would have to learn, for example, planning.

Risk

The idea of risk in regard to business was raised. This meant being prepared to take risks in a hypothetical situation, but one student commented as follows,

“although as an undergraduate I might have been more gung-ho, I now realise that it’s very difficult to build a company”

On a more positive note, the same Welsh student noted that,

“if I was to start a business, it probably would be in Wales because of the WAG business start-up support – know friends who have taken that opportunity and started companies from scratch”.

A unique theme, which relates to risk and emerged in ‘any other comments’ was that disappointment and failure is a way of growth as opposed to the culture in schools that ‘kids cannot fail’. However, in the real-world people do fail and a second chance is not always possible, which in terms of post-traumatic success might encourage risk taking. This student felt that,

“any work would achieve a pass because there is a culture that students cannot fail”

This culture might be seen as patronising and encouraging a lack of effort, and also reflects a risky strategy.

Question Two: Do you see any obstacles to be overcome in your plans and aspirations, if so please could you tell us what they might be?

15 students gave responses on the obstacles they thought they might encounter as entrepreneurs. The main broad key themes were: Finance, the impact of dyslexia and business-related difficulties.

Finance

The main obstacle to a business for most respondents seemed to be financial, based on the idea of financial risk in regard to business. Initially it was thought that there might be

financial obstacles; one student commented,

“although a 1-2-week internship in a finance department would allow you to learn this aspect of a business, it would be hard to work within a limited budget”.

This seemed to be related to the constraints of adhering to a strict financial limit.

Another student said that,

“as a self-employed landlord, I have difficulty taking money off people and being ruthless is something that I would need to learn—the more people that rip me off, the more hardened to it I would become.”

This statement seems here to be more specifically related to a lack of assertiveness as a financial obstacle.

Another student also felt that they would need someone who would help them with financial dealings.

Impact of dyslexia

Perhaps surprisingly, fewer respondents noted the potential impact of their dyslexia, although they discussed the impact of their dyslexia in regard to business. One student said,

“tend to think that any difficulty in my work is due to my dyslexia, even if this may not be the case”

Another student said,

“my greatest flaw is my inability to assimilate information quick[ly] and because I’m slow at reading and assimilating knowledge, this influenced the university I’m attending”

Several students mentioned writing as a difficulty, for example, writing letters, spelling, writing emails quickly and communicating on the telephone, and one student commented,

“my dyslexia worries me, with regard to having a business in industry - my mother has not been diagnosed with dyslexia, but she’s not very good at writing and thought, - it’s not a problem that you get over but you get round it,”

They recognised that they needed to improve their writing skills, and others seemed to

equate dyslexia with difficulty in writing. This led one student to state,

“I’ll delegate writing to other people, if necessary, but I’m going to fight it, my English is improving through writing essays on my course.”

Another student even refused DSA support, for example the use of note takers, because they felt it was counterproductive and that they would be better served if they took the notes themselves and so learnt to develop the skills:

“Trying to listen and take notes at the same time, concentrating so much, I end up not hearing what the lecturer is saying. I’m listening, but it is not going in, so that I end up missing the key points. Now I feel that I’m slowly getting better at overcoming that.”

One student stated,

“Planning is an obstacle specific to my dyslexia, particularly time management. I need to be very strict with myself in order to get things done because I flick... between passions, (although I am) 100% with anything I do”.

Two students thought that their dyslexia could be an obstacle when applying for jobs particularly in answering the application question: ‘Do you consider yourself to have a disability?’ One student said,

“I am in two minds, should I state that I experience dyslexia and combat it or should I just keep shtum?”

The other student thought that their CV needed to be really good in order to get an interview because of their dyslexia. Although a third student thought that getting hired in a time of recession would be an obstacle, they did not attribute this to their dyslexia.

A number of students had received a late diagnosis, for example one student was not tested until 2009 in the first year at university,

“although my sister was tested at secondary-school age and found to be dyslexic. So, teachers wondered why I did not achieve my predicted grades in my S level results. I went privately for a diagnosis and found that I had a slow processing speed”

Another student had mixed feelings about a late diagnosis of dyslexia, stating

“I felt let down”

Reflecting on school, especially Junior School, they stated,

“I was shouted at quite a lot for demonstrating what I now know to be classic symptoms of dyslexia. This happened throughout school repeatedly -if any of the teachers had picked up on it, I could have done so much better”.

Conversely, for one student difficulties were recognised in primary school, and support put in place, in the form of readers, and extra reading sessions. This was owing to the Head of the department pursuing continual professional development and needing a student to test. This student was selected because *“they found me quite interesting”*, and they were given a diagnosis of dyslexia and a profile of their strengths and weaknesses. Despite this early support, they described their difficulties with study skills at university, noting mainly that they had never been able to take notes in lectures.

Another student thought,

“being dyslexic makes people have more drive. From my own perspective, I feel it does not really affect me, in that it’s only occasionally that I cannot spell or read as fast as others do. I also think in entrepreneurship, people with dyslexia work harder because they know they’ve got to. In my modules in human resources and organisation all wordy stuff, I have good lecturers and the module is good, but I have to write essays for coursework and in exams. Therefore, I know I have to do a lot of work on these and know what I need to write for every question. I’m good at getting straight to the point”

This student has worked hard on that, with the result that these were some of their best exams because of their work. Having said that dyslexia didn’t really affect them, later in the interview they said that,

“I know I’m dyslexic and it affects me in a bad way but if you just work at [it]....”

One of their exam strategies concerning spelling specific words was to write them on paper and stick these around the room so that they would know *“how to spell them”*.

In terms of support, students spoke about support for dyslexia, and how this impacted on their progress. One student noted that they were given reasonable adjustments of 25% extra time and a separate room for A level exams. In terms of assistive technology programmes, they had text-to-voice and mind-mapping software, as well as a Dictaphone, printer and scanner. They were also given coloured sleeves for their screens which could be taken into the exam and these were really helpful. Another student said,

“I have an appointment each week with learning support and if I don’t have my work read through it made a five percent difference to my grades by having my spellings checked”

One student explained how they learned,

“The best way that I learn is by watching a video on my right-hand monitor whilst putting it into practice on my left-hand monitor: watch the example, do the example’ learning – this is an example of free video learning, rather than learning from a text-book because I do not have the patience for that because of my difficulty with reading comprehension”.

Positive aspects of dyslexia were briefly raised by a number of respondents in ‘any other comments’ but views on this were mixed. One student said,

“Although I was told when younger that dyslexia would not ‘hold you back”, I’m quite cynical and think that parents/teachers were just ‘being nice’. Now I’m at university and doing well, it is not a problem”

Another student noted,

“nice idea to look at entrepreneurship and dyslexia- confidence is the main thing and then I don’t think it will be a stumbling block as I’d previously thought”

One student shared a good understanding of the costs and benefits of dyslexia,

I’ve developed quite strong coping strategies and a lot of people don’t realise that because they may have developed these coping strategies as well, that they are dyslexic. Having done a lot of reading about it, I think that this is a positive aspect about which awareness needs to be raised. I also find it interesting that reading in the area of dyslexia has enabled me to recognise traits of dyslexia in other people either as I talk to them or if they are reading some of their group work assignments that they’ve done”

Finally, in this section, one student thought that the reason people who experience dyslexia find entrepreneurship easier is because they are usually very good at problem solving; they have had to deal with not being able to spell or calculate a maths problem. This means they are more likely to work for themselves than in the public sector, where they would be judged for making mistakes

Business Related Obstacles

A wide range of responses were presented in this response to this question, with little overlap between the viewpoints, although there was clear evidence of some realistic concerns about the difficulties involved. Even actually starting up a business would be an obstacle in itself, for example, learning how to do it all, the *“business side of things [which was] not taught on the course”*.

One student said they also were uncertain about the timing of their current ideas,

"I might have an idea which may not be feasible in 3 years-time, or would probably be feasible in three years (after graduation)".

Another student commented,

"trying to think of an idea to give yourself that niche within the market or developing something new could be an obstacle".

Moreover, the competitiveness of having your own business would be an obstacle and related to this, one student said,

"it would be difficult to comprehend the size of a business market as I've never experienced the size of some business markets"

Other students commented, variously,

"market research would be important when developing a product" and "lack of numerical or mathematical skills could be an obstacle".

Several interesting unique themes were expressed, for example, a lack of self-confidence. One student commented,

"need to be passionate and put your whole self into a business in order to succeed well in entrepreneurship but the danger is I'd enjoy it to start off, but being devoted to one thing for a long time and following it through would be an obstacle because I like to do lots of different things."

For another student,

"Needing to be friends with everyone could be an obstacle – and gaining people's trust within the industry would also be difficult".

Other students variously contributed the following comments:

"getting people to understand what I'm doing would be an obstacle because this is not a field that is developed at home."

"the need to take the risk would be one of the biggest obstacles because I'm risk averse"

"Maintaining your reputation would be a difficulty"

while one student commented,

“need to become better at presentations, as this is a key thing if you have to do a pitch and to maintain a reputation you have to be able to do the maths, equations and calculations to verify that what the computer is giving you is correct, which would prove or add weight to your argument when making a pitch.”

Other unique themes were internal such as health, or the need to develop more out of the box thinking, one student even realised,

“I’ve not thought enough about my own strengths, which is probably a weakness”.

Other obstacles were external, and related to the environment and their familiarity and comfort within the area they worked. For example, coming from a small town could be an obstacle as they had never lived in London. Moreover, being in an office environment would be an obstacle because they would like to be out and about a lot.

One student was concerned about contacts,

*“a certain element of the ‘old boy system’ wherever you look is an obstacle which is something I’m beginning to resist, recognising that people I know have got to where they have, because of **who** they know, rather than **what** they know. Being the person on the other side of that, I find this unfair, which might represent an obstacle or possibly could become something I could network.”*

For another student environmental issues were key,

“Sourcing ingredients is a big issue. The lack of land in the UK, for example, together with an increasing population leads to sourcing issues, to reduce sea-miles is becoming a problem for retailers and manufacturers having to import so much from abroad because of the climate and other environmental factors.”

Question Three: Are there any specific skills and/or techniques that you believe you need to develop/learn to fulfil your aspirations?

A good response was received to this question, discussing the skills or techniques they thought they needed to develop, although some did not really know which skills they needed. There were five shared themes with fairly consistent responses: these were knowledge, communication, professionalism, finance and time management and organisation. A further theme of experiences has been added, relating here to experiences in university, based on a number of comments derived from the ‘any other comments’ section, where many students took the opportunity to outline what they felt was needed to smooth the path for students who experience dyslexia.

Knowledge

This was clearly valued in these respondents, perhaps not surprisingly when they were students engaging in Higher education at various levels, and so they considered different aspects of knowledge important.

One student commented,

“think learning another programming language would be useful, for example JAVA, to create Facebook applications and games which mid-sized enterprises may want in future marketing campaigns.”

Another student suggested that an MBA would help others to have confidence in them,

“a few letters after your name and that piece of paper saying “you’ve got this certificate” would help”.

Several students thought it necessary to know the different tasks that constitute one’s business and “to understand the ‘nitty-gritty’ of business” and another student stated,

“I need more of a ‘savvy business mind’ as well as knowing more about economics”.

Nevertheless, one student noted the following,

“It is possible to learn a lot of things. Before this year I wouldn’t have been able to do half the things that I’ve achieved”.

Communication

Interestingly, a number of students thought they needed to improve various facets of communication. Comments included the following;

“it’s necessary to be able to know how to communicate in a simple format that people can understand but is at a high level as well”,

“I’ve been a secretary, so I know how to talk to people”,

“writing reports for the business will be an important skill”,

“I’d also need to develop the skill of communicating to large crowds”

“It will be necessary to be able to convince others to believe in you and your business idea”.

Another student thought,

“it’s important, when communicating decisions to a workforce, to do it with explanation and understanding whilst achieving the result needed for the business.”

Professional

One student noted the importance of professionalism,

“it is necessary to be professional without favouritism, because it may be necessary to take a decision and “bulldoze it through” because it needs to be done for the benefit of the business. I think transparency is necessary when dealing with employees with regard to business changes and that staff should not be kept in the dark. I also think it necessary to develop skills to keep the business alive and maintain its reputation.”

Another student noted,

“in order to be successful in business you would need to be less attached to your own work or ideas otherwise it would get in the way of the business”.

Finance

The need for knowledge of finances was acknowledged by one student, explained as,

“balancing income/outgoings and dealing with people’s wages as well as the challenges of finding the materials without sinking the business financially”

Another student considered,

“I need to know more about economics, but acknowledge that I’m fine with finance”.

Time Management and Organisation

One student recognised that they had to develop better time management, and another student said,

“I have to develop better organisational skills. I’m improving, slowly but my method is “chaotic order”, but it would be impossible to run a business or deal (with) high level environments this way”.

Experiences in University

Although not solicited in direct response to this question, a number of statements elicited in the 'any other comments' section related to the students experience of business studies at University, with both positive and negative responses.

One students' concern was access to support,

"I know a lot of my friends couldn't get appointments for a diagnosis of dyslexia and support - they struggle but it would be nice if they could make people marking it aware -not saying give a higher mark -a discretionary thing"

Another student commented,

"a lecture from the then Head of XXX Business School, who had an interesting way of thinking, taught me entrepreneurship."

Exams were mentioned; one student noted,

"the exam I sat half way through the year was the hardest, because I like maths and my essays for HR are improving, but the finance module Exam presented challenges - net present value, the internal rate of return etc., I just could not deal with this and I had to write 'wordy' answers. I find it strange, but in some ways quite good, because it is challenging, at the same time so challenging I think I may have to retake."

In contrast, another student found,

"it was a complete surprise to do so well in one of my exams because I was awarded an 'A', but I did revise hard"

In terms of coursework, one student noted the following,

"within my PhD degree, some of the modules covered over the last few years are, for example, financial issues for management, entrepreneurship, business ethics, business management, decision making within management, value creation, and health and safety... I don't like the latter modules because there is only one answer to questions, whereas we all know there's not, but in the other modules, your opinion is required. [Students] are asked what the problems are, and what is the growth of the business. Business ethics is a [module] where one can't give a right answer, you have to justify your answers and you are marked based on the quality of your argument".

This suggests that this student is seeking a wider approach to assessment.

Finally, another student had contact with the careers service, but did not think the services were adequate.

“I don’t think the library services should do this, but instead every department should have a careers department. As I’m now applying for jobs, I feel I need to know what the people shortlisting and interviewing want to hear. I struggle with applying for jobs even though I’ve applied for well over 20 now. When I start a new application, there is a ‘wall’ that I need to overcome.”

This student also seemed to be seeking a different approach from the careers service, which may not be possible within the remit of these services, but there seems to be a need for greater dyslexia awareness.

“in a way, I don’t think that there should be any special different system for someone who has dyslexia and wants to start a business than anyone that’s non-dyslexic and wants to start a business or is interested in entrepreneurs. I don’t think there should be any...”

Question Four: What about business sense, enterprise, entrepreneurship – what would be the right sort of support, or lessons in school?

There was a clear interest in responding to this question, from the majority of the students, with an awareness that greater emphasis on practical lessons, team building for entrepreneurs and talks and workshops from business people and entrepreneurs about their experiences would be beneficial for those with an interest in business.

One of the students thought,

“entrepreneurship is innate and cannot be taught, but students might be screened to see if they have the potential. In spite of this, I recognise that there are certain subjects that can be taught, for example, marketing, personal and business finance”

Another student shared this theme,

“maths and planning should be added. Enthusiasm and a desire to improve oneself are necessary characteristics to be an entrepreneur but I believe that these are innate and although examples of entrepreneurship can be given, it cannot be taught.”

A further student contributed,

“I also think that schools are not flexible enough or, too hidebound to move ‘outside the box’” and are not aware of what is happening in the real world. Instead students have to learn from books and pass exams,”

This is a viewpoint reiterated below in the section on practical experience in schools.

Finally, one student suggested,

“Whilst learning some theory is necessary, it needs to be put into practice so there is a need for some unstructured days where students can experiment. It is necessary to establish an environment that fosters creativity and allows students to follow an idea. Entrepreneurs need to go through the process and understand how everything works in order to develop. Help with academic support will also be necessary for students who experience dyslexia.”

Practical

A main theme was that school education for entrepreneurs who experience dyslexia should have more focus on practical elements,

“because students are so busy learning for exams that there is no time for practical application of theory”

This interesting point was raised in the general introduction to this question, and respondents provided a range of well thought through applied suggestions for projects that might be utilised in developing practical skills. These included,

“a ‘make and sell’ course, either making food or woodwork (for example, a chicken hut) and selling them, learning some basic concepts of finance/profit and gaining a practical understanding of the producing and marketing of an item dealing with real money”.

“Mathematics could be taught by applying it in real world situations and in employment situations. IT could be about removing viruses and writing programmes as well as finance”.

“hands-on experience and making students take on some business responsibility, for example, running the tuck (sweet) shop for a week would allow students to try out their ideas practically”

One student pointed out,

“often practical aspects of entrepreneurship are explored in lunchtime clubs, which of course are optional. By contrast, if it was taught in Personal Social and Health Education (PSHE), a compulsory lesson, everyone would get some basic business input and it would make the lessons more interesting. During GCSEs, my class had plenty of

time and a compulsory hour on entrepreneurship would have been worthwhile”

Moreover, one student suggested,

“School students should volunteer as part of a course, in something that interests them for two hours a week because this would educate young entrepreneurs. I did charity work as well as Youth Enterprise. I think there should be 75% theoretical work and 25% practical lessons for entrepreneurship, in order to apply what is learnt in different areas, because working is the only way to develop business sense”.

Youth Enterprise

Youth enterprise was recommended by several students and one student even suggested,

“it could be compulsory because it is such a good learning experience”.

Another student said,

“I know of two groups of students (approximately 20 in total) who took part in Youth Enterprise and were able to run their own business for six months”.

Although another students’ school did not take part in Youth Enterprise, this student’s brother had benefited, which, in turn, influenced the respondent.

One student felt,

“there should be more focus on employment including the production of CVs. As a student ambassador in school, I watched some children sit down in class and it seemed as though their brains “switched off” but outside the classroom the same children could be imaginative and engaged”.

Another student believed,

“out-of-the-classroom competitions are important because, [k]ids are more interested in this than sitting in a classroom”.

Primary School

Primary school was mentioned specifically but students disagreed about the effectiveness of teaching entrepreneurship at this level. One student considered,

“children the same age as my son, that is, primary school age, should be taught entrepreneurship indirectly as fun. I encourage, not in a pressured way, my son to look for opportunities, for example, to be aware what their friends may buy and see if they can get it for them cheaper... group activities may be taught as a little home project, e.g. selling cakes – but in a very light-hearted way with perhaps a prize for the best project. It is important to establish that young school students have been engaging in business and that disappointment is part of business and perfectly normal”.

However, in contrast, another student thought primary school was too early for entrepreneurial study.

Secondary School

Several students thought entrepreneurship/business should be taught at schools, and GCSE was seen as a critical time to practice and implement these skills.

“anyone at GCSE level should be allowed the possibility of studying Business and IT courses”.

“entrepreneurship and the legal aspects of business should be taught to some level because the development of new businesses is how the economy will grow; someone who wants to start a business should have the basics.”

Another student suggested,

“business strategy planning would have been helpful and should be taught at pre-GCSE level in general secondary schools, taking an idea and planning the implementation of it. Teaching real world scenarios as part of business courses instead of ideal hypothetical scenarios would be of more practical help to someone who wanted to go into business. The ability to think, argue and defend a position would be invaluable in business. Work experience in a company such as a parent’s place of work or company would be invaluable and a class on the ‘World of Work’ would be a good initiative to promote individual thinking, confidence and business understanding.”

One student made the following suggestion,

“at GCSE level each subject could be applied to real life scenarios, for example, finance could be linked to a personal budget; reading in English Literature could be linked to reading in business etc; being ‘book smart’ is not necessary to succeed in the real world.”

College/A Level

Some respondents felt that lessons on entrepreneurship could be given at A level when students have fewer formal lessons, or even when the rest of the school was at assembly. This might allow individuals to go straight into business from school instead of going to university first.

Not all students were satisfied with the support they had received in school:

"I felt restricted at school because I was one out of 1000 students, so everything was 'homogenised' that is, development of the individual was not a priority".

There was a clear emphasis from a number of students on the importance of teamwork and practical interactive workshops. Various comments included,

"my school was good at CVs but it was all focused on a personal statement instead of offering something that would help a person in the business environment. Team building classes should be part of school curricula because although there is the possibility of teamwork in sport, this is not so in business classes currently."

"practical classes, for example, groups of A Level students could plan and organize a money-spinning task such as offering to clean cars for people as I did in the first year of university on the Enterprise Management module"

"plenty of practical, interactive workshops particularly around what students wanted to do once they left school"

"team business scenarios would be useful, where a task might be set, various parameters could be given, together with a balance sheet and after 30 minutes the different groups could be assessed".

The importance of involving established entrepreneurs in these sessions was emphasised,

"a three-day team building workshop for entrepreneurs, especially if new people are joining the school sixth form, would help to meet new students and help them transition into a new place. Talks or team building workshops from people in industry and the marketing world would encourage entrepreneurs."

"particularly talks by successful and failed entrepreneurs."

"considering what a successful entrepreneur has done in a situation could be discussed as a teaching practical."

OVERALL DISCUSSION

In this study a series of interesting responses were obtained from two small groups of students who experience dyslexia, studying business studies in two different university settings, with an intention to set up their own business over the next few years. A number of items where there was some small measure of consensus emerged, but it was notable that the responses were also characterised by a number of unique observations, that pertain specifically to dyslexia.

The first question related clearly back to the literature on the overlap between dyslexia and entrepreneurship and the characteristics of dyslexia that have been identified as particularly suited to a career of this type. The key themes identified here as strengths in relation to their aspirations were; determination, people skills, organised and efficient, practical, creative, logical and willing to take risks. Interestingly organisation and efficiency are not always highlighted in the literature on dyslexia, but it seems that these are key requirements in order to achieve success in university and later in entrepreneurship.

It is interesting to note clear instances of a number of the characteristics that have been highlighted, for example those identified by Nicolson (2015), in terms of communication and people skills, although it should be acknowledged that there is less consistency in the responses than could be expected on the basis of the literature. So, although resilience is not specifically highlighted here, there is strong evidence from the majority of the students involved for aspects of determination, and never giving up, or finding alternative ways, which could be interpreted as resilience, although one student associates this with stubbornness.

Moreover, many of these characteristics associated with entrepreneurship could be identified as positive or negative depending on the mind-set of the individual, with many of those who experience dyslexia showing poor self-esteem, which may encourage a more negative interpretation of what could be seen as relative strengths. Consequently, one student admitted to not having previously considered their possible strengths, and interpreted this as a weakness.

The whole concept of strengths in dyslexia is one that could be fraught with difficulties, because for many of those who experience dyslexia, they have learnt to focus on their failures, and the universal search for strengths may leave them feeling stressed and that they have once again failed, this time in aspects where the literature expects them to shine, which can be related back to Vail's comments on 'strength and/or bane (Vail, 1990). Interestingly, in terms of strengths in communication skills, echoing the findings of Garrido Yserte et al., (2019), they also highlighted that this was because they preferred to discuss, rather than put something in writing, so once again relating this back to a weakness.

Conversely, some of these comments that might be interpreted as indicative of low self-esteem, and a focus on their weaknesses, might also be interpreted in terms of asking for help and modesty, unique features of successful entrepreneurs who experience dyslexia identified by Sepulveda, 2014 (see also Sepulveda and Nicolson, 2020).

Their ability with people skills and motivating others could also be associated with working in a team and delegating, although these issues were not always specifically addressed. Creativity and out-of-the-box thinking (Nicolson, 2015, West, 2009, Eide and Eide, 2011) also came through clearly, and here this was seen as largely positive, although one respondent even interpreted this positive trait as a form of laziness. Finally, a willingness to engage with risk came through from a number of students, which could be related back to their experience of failure and post-traumatic growth (Alexander-Passe, 2017). In terms of potential links with ADHD (Kaplan et al., 2001) and impulsivity, it was clear that several students not only shared the intense focus that characterises entrepreneurs, but also the heterogeneity in the projects they were undertaking, which might suggest elements of comorbidity.

The second question on the obstacles that might prevent a satisfactory outcome, similarly tap into the pattern of strengths and weakness. Interestingly here, the concept of financial risk, rather than risk more generally, seemed paramount in presenting obstacles to successfully developing their entrepreneurial expertise further (Alexander-Passe, 2017). Although only a handful of students discussed the impact of their dyslexia, it was clear that their experiences of both diagnosis and support within the education system had influenced their self-concepts for better or worse. One student had support from year 7, replacing Latin, and it is interesting to note that this student comes up with a wide range of interesting suggestions in terms of entrepreneurship, However, they showed continued lack of confidence, expressed in a need to be friends with everyone, and to build trust in those with whom they were involved.

Many of the comments in this section can be related to the literature, most specifically the studies from Alexander-Passe, emphasising the potentially destructive impacts of continued failure. (Alexander-Passe, 2016; 2017). To summarise the disparate responses to this question, they seem to reflect lowered self-esteem in this group, despite their relative success in education, which leads them to question whether they have sufficient ability and motivation to overcome the obstacles. It is interesting to note the differences between those who internalise the obstacles, seeing them as intrinsic to themselves, in contrast with those who home in on extrinsic features of the situation, features which might be applicable to anyone, not just those who experience dyslexia.

The third question analyses how prepared the participants feel to engage with entrepreneurship and what they feel may be lacking. Interestingly, it was thought that the skills needed by those who experience dyslexia would be no different from any other student setting out to become an entrepreneur. It may be, therefore, that

entrepreneurship should be encouraged in the student population and others without favour, in response to the changing economic situation in the world.

The responses here might indicate that the students were aware of how much they had already learned but were ready to engage with further challenges. Knowledge was seen as particularly important here, with the need for certification, as well as an awareness of much they had already learnt. This suggests that despite the strengths that have been highlighted as linked to this skill in adults who experience dyslexia, these respondents are aware of a heightened need to improve in this area.

Their comments here on the ongoing need for communication skills may also represent elements of empathy (as highlighted by Sepulveda, 2014) towards a potential audience. This would be predicted to stand them in good stead in these endeavours, despite an awareness that written reports might remain problematic. Respondents identified finance as an ongoing need for further development, as well as the need for greater professionalism, and both time management and organisational skills. The 'chaotic order' identified here reflects the issues with everyday memory identified by Smith-Spark et al., (2004).

The responses here may be a further example of instances where the 'big picture' thinking that has been associated with dyslexia provides another strength. Writing CV's and interview techniques may well be a clear instance of a skill that students who experience dyslexia need to acquire systematically, in order to develop their confidence in job applications. Knowing that they would be able to deal with any questions that arise, would help them to overcome many of their confidence issues in this situation.

The heterogeneity of responses here may suggest that some respondents do not necessarily share the innovative thinking that has been shown to characterise adults who experience dyslexia, and that this may be a further instance of the literature on strengths providing a challenge in itself.

Finally, the last question considered, what could school have provided to enhance these aspirations further, links to the model of sustainable enterprise, in ensuring that the environment can be tailored more closely to the needs of budding entrepreneurs (Stock et al., 2017). This question echoes the debate from Marram and colleagues, (2014) on whether or not entrepreneurship can be taught. There is clearly more scope for the use of entrepreneurial education throughout the schooling system, with differences between regions in the adoption of this approach, as well as a role for bringing in practical experience at an earlier age. Certainly, the data from the Company Impact Report (2017) discussed in the introduction, highlights the success of this scheme for everyone involved, although it should be noted that attempts to differentiate those who experience dyslexia were not undertaken here.

It is also interesting to note that differences emerge between some students who experience dyslexia and those who do not, in terms of their approach to this type of exercise. This is evident in a greater emphasis on practical aspects for the group who experience dyslexia, by contrast with the theoretical approach of the majority of students. Thus, there was a clear recognition that more aspects of business could be subsumed within a more general curriculum, with practical experience in the underlying components likely to engender success, such as finance, Maths, even learning to programme and eliminate viruses in IT sessions.

Most of the students interviewed here thought primary school would be too young to initiate this approach, although it would be possible to introduce fun ideas focusing on what this age group would be interested in buying for themselves. A key aspect here would be acceptance that failure was not a total setback but part of the experience of learning, something that could be applied to both practical and applied aspects of the curriculum. However, the secondary school curriculum was seen as a natural focus for more structured training for all students, with specific GCSE's focusing on practical applications of both business planning and finance for business, using real-world rather than hypothetical case studies.

Interestingly, the key period for a stronger focus on this type of approach was seen to be A level and college, when the teaching day was less constrained by the curriculum. A more targeted approach to developing CV's to foster business experience was recommended rather than the current emphasis on personal statements, with entrepreneurial group projects carried through and evaluated in all aspects including planning, finance and success. A key requirement here was suggested to be workshops and presentations from entrepreneurs themselves, including not only those who were successful, but also those who struggled and experienced failure.

Returning to the key themes from the semi-structured interview, a number of points emerge that are clearly recognisable as consistent with the profile of dyslexia. Despite the support they were receiving, a number of respondents continued to struggle with aspects of their university course. They were aware of limitations in their study skills, and recognised that they benefitted when allowed to demonstrate their strengths. This meant they challenged methods of evaluation which demanded set answers dependent on memory. More specifically, they valued those courses that gave them an opportunity to present a reasoned argument, in which they recognised their strengths. Above all, they recognised the need for further training and qualifications in aspects of learning key to entrepreneurial success. Moreover, some of their suggestions seem to be equally applicable to all those with an interest in entrepreneurship. The level of self-awareness demonstrated throughout might suggest that dyslexic students should be more involved in the structure and design of their own courses. Given the appropriate tools, they would be more than able to fulfil their own needs, and further research in this area would be appropriate.

In terms of the strengths and weaknesses of the study, the material here was directly gathered in response to a semi-structured interview from a relatively wide range of students who experience dyslexia within two different environments, one rural and one urban. All the students accessed for this study had received a clear diagnosis of dyslexia, based on psychologists' reports/specialist teacher reports enriched with assessments of aspects of literacy. This has avoided the potential limitations of some of the earlier studies, and may help to resolve some of the issues arising.

There is no doubt that a different set of questions might have elicited different responses from those reported here, but nevertheless, the use of the 'any other comments' allowed students to lead the interview into directions that they found particularly relevant to them, which represents an added strength for this study. There is clear evidence here for these students as innovation drivers, led by motivation and the willingness to motivate others, leading to creativity, encompassing innovation capacity, and knowledge, which has been called the essence of innovation, in line with Stock and colleagues (2017) model for sustainable innovations.

Further research comparing these findings on entrepreneurship to students with no evidence of specific problems, would help to ascertain how much of their responses can be attributed to their experience of dyslexia, rather than a more generalised need to adapt to new projects and ideas that may not have previously featured in their ongoing plans. It might be considered for example, how much their move towards self-employment was voluntary, rather than based on the changing economic climate, coupled with their own difficulties in academic subjects, as well as the daily constraints on memory and organisation (Smith-Spark et al., 2004).

Moreover, it is not currently possible to clarify what the ongoing effect of the Covid-19 coronavirus pandemic will be on these particular students, in common with other self-employed young entrepreneurs during this period of prolonged self-isolation world-wide. Responses could also have been sought from a wider range of universities, where different experiences might be predicted to pertain. Nevertheless, this study has produced a considerable quantity of data, which represents a novel and important contribution to the literature on entrepreneurship and dyslexia.

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