**INVESTIGATING THE STRENGTHS OF DYSLEXIA IN SUCCESSFUL ADULTS AND UNIVERSITY STUDENTS**

By

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# Abstract

The aim of the research in this thesis is to contribute to the body of knowledge relating to the strengths of dyslexia, with the longer term aim of helping dyslexic individuals to craft their lives and their jobs according to their strengths. This research has its foundation in three ‘communities of practice’: Work Psychology, Positive Psychology and dyslexia. The combination of the three areas of focus has led to the development of ‘Positive Dyslexia’ (Nicolson 2012), with a view to identifying -or crafting- a career that suits one’s strengths. The approach provides a counter-weight to the necessary but limited focus on weaknesses and their remediation. Current knowledge about career strengths in dyslexia is piecemeal and anecdotal. The overall design of the thesis was therefore to explore the territory of dyslexic career strengths by carrying out systematic qualitative interviews with successful dyslexic adults with the aim of identifying sources of commonality and heterogeneity. A questionnaire was then developed designed to incorporate the themes identified in this qualitative research and was administered to dyslexic and non-dyslexic University students thereby providing quantitative data on their incidence in a younger population. The overall design of the study followed an exploratory research design and is outlined below.

Study one was a qualitative study with twelve dyslexic high achievers using a semi-structured interview designed to identify what they considered to be their strengths and their difficulties in the workplace. Participants were selected to represent a range of careers. Interpretative Phenomenological Analysis (Smith, 2009) was used to identify sub-ordinate themes. These were then classified into a three-domain taxonomy: Work Strengths, Cognitive Strengths and Inter-personal Strengths, with a 'triad' of strengths in each domain: for the Work Domain, *Determination / Resilience, Proactivity* and *Flexible Coping*; for the Cognitive Domain, *Innovation, Big Picture approach,* and *Visuo-spatial skill*; for the Interpersonal Domain, *Teamwork, Empathy* and *Communication*. Differences between domains arose both from job requirements and from experience.

Study 2 was designed to assess the generality of these findings, using interviews with eight dyslexia experts with extensive experience of working with dyslexic adults. The interview schedule used for this study included additional sections relating to *support for dyslexics* and the *need for strengths based research.* From the themes in study 1, all six of the Cognitive Strengths Triad, Inter-personal Strengths Triad (the 'Big 6') and the Work Experience Strengths were supported, whereas from the Work Strengths Triad skills, only Determination/Resilience were highlighted. Additional themes emerging were *need for* *ongoing support, areas of difficulty* and *consequences of not finding strengths.*

Study 3 was designed to address three issues emerging from the first two studies; first development of quantitative measures of the strengths identified in Studies 1 and 2; second, testing of younger adults (students rather than work professionals) to assess which skills might be self-selecting for success and which might develop through experience; and third to assess the specificity of the Strengths triad to dyslexia by including non-dyslexic student groups that were expected to show strengths in each area. Three student groups were used for this comparison; Management students to compare entrepreneurial traits and behaviours, Psychology students to compare levels of empathy and Architecture students to compare degrees of visuo-spatial ability. A comprehensive test battery was developed based on the themes generated from the first two studies by combining where available, existing tools with direct assessment of interpersonal and cognitive strengths. Student groups were also assessed on Holland’s Occupational Types (1973) in order to investigate job preferences. Overall, it comprised 110 items and was returned by 76 respondents.

As expected, the groups showed great heterogeneity in performance, and this reduced the power of the statistical analyses. Between-group differences for Big Picture, Visuo-Spatial, Empathy, and Teamwork were as predicted, with significant differences found for the Big-picture and Visuo-spatial ability. By contrast, the dyslexic group did not show the predicted strengths in Creativity or in Entrepreneurial tendency. Holland job preference analysis revealed a range of differences, with the most striking being a highly significant (compared with the other groups) non-preference for Conventional careers.

In conclusion, the studies in this thesis have identified for the first time a set of ten skills, characteristic of successful dyslexia adults, and developed prototype tools that allow these strengths to be assessed. The thesis also provides suggestive evidence that these skills may develop further through work experience and highlights the heterogeneity of individual strengths, both in dyslexic and non-dyslexic students. The findings provide strong support for the longer-term aim of developing dyslexia-friendly career advice and talent development systems based on a person's unique strengths. The findings have strong implications for parents, schools and employers.

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# Preface

Although dyslexia research and practice has seen outstanding progress over the last twenty years, there has still been a tendency to focus on the negative aspects of dyslexia. Much of the support for adults with dyslexia has focused on continuing support and effort relating to their literacy difficulties, as well as accommodating for other difficulties in terms of their working speed, concentration or working memory. Admirable though these attempts are, they address only one side of the coin. The cardinal feature of dyslexia is that individuals have a ‘spiky’ cognitive profile, consisting of unusually profound weaknesses, which are simultaneously balanced by substantial strengths in other areas.

Most dyslexic individuals will be familiar with the ‘Dyslexia Hall of Fame’, claiming luminaries such as Albert Einstein, Leonardo da Vinci, Auguste Rodin, together with more recent properly documented entrants such as Richard Branson and Ingvar Kamprad (for the success of their entrepreneurial business empires), music legends such as John Lennon and Cher, actors such as Tom Cruise, Henry Winkler and Susan Hampshire, sporting stars such as Steve Redgrave and Jackie Stewart, inspirational creators such as Steven Spielberg and the architect Richard Rogers, among a myriad of others.

For many individuals with dyslexia, these ‘role models’ will be inspiring, but since a standard estimate suggests that one person in 14 is dyslexic ([R. L. Peterson & Pennington, 2012](#_ENREF_93)), for the majority of dyslexic adults the future will be markedly less bright, with disproportionate numbers ending up either unemployed or incarcerated ([Grigorenko, 2006](#_ENREF_51); [Kirk & Reid, 2001](#_ENREF_63)).

"*We are time and again quite staggered at the number of adults with dyslexia who find themselves in employment which is inappropriate for their skills, and the specific demands of the job puts them under almost daily pressure. This type of situation clearly removes much of the pleasure and self-satisfaction from work. Feelings of frustration and lack of self-confidence can prevent a person with dyslexia from enjoying employment’*  (Reid & Kirk 2001)

Positive Dyslexia incorporates two bodies of research, namely, Positive Psychology and dyslexia (Nicolson, 2012). It attempts to uncover how dyslexic individuals can improve their levels of happiness and their skills by utilising their strengths. The emphasis is placed on *how* dyslexic individuals are taught, comparing ones self against one’s own development rather than against other people. It is thought that by utilising Positive Dyslexia, dyslexic individuals will be able to identify their signature strengths and find career paths that utilise such strengths. If dyslexia is approached in a positive light, rather than negatively, it should encourage greater inspiration, goal-directed behaviours and a successful life on the part of dyslexics. Nicolson (2012) discusses how Positive Dyslexia can be utilised by different people, throughout the dyslexic individuals life, and can assist in pinpointing the careers in which their skills might be best suited.

Following extensive analysis which has been conducted on the ‘strengths of dyslexia’, stemming from the literature of [Vail (1990](#_ENREF_120)) and [Geschwind (1982](#_ENREF_44)) through [Raskind, Goldberg, Higgins, and Herman (1999](#_ENREF_96)), [West (1999](#_ENREF_127)) and [R. D. Davis and Braun (1997](#_ENREF_23)), [Eide and Eide (2011](#_ENREF_28)) and [Leather, Hogh, Seiss, and Everatt (2011](#_ENREF_67)) a range of potential character strengths and intellectual strengths associated with dyslexics have been identified. Albeit scattered and somewhat systematic, extensive research has demonstrated the strengths of visuo-spatial reasoning and creativity. What is less clear, however, is *how* these can apply in a work context, and whether there are additional characteristic strengths possessed by dyslexics, that have gone unrecognised.

The structure of the thesis is as follows:

Chapter 1 introduces the literature review. Here I review the focus of the literature on the weaknesses associated with dyslexia, investigating underlying causes and the provided explanations for the associated weaknesses of dyslexia. I will then move on to describing the research into dyslexia and the workplace and the movement towards a strength based approach to dyslexia and careers.

Chapter 2 forms the second part of the literature review focusing on the contributions of the strengths approach to dyslexia by drawing upon *‘talents’* associated with dyslexia as well as empirical contributions to strengths based research. It will then move onto describing the outline of Positive Dyslexia, touching upon the critical contributions from the field of Positive Psychology.

Chapter 3 introduces the first of the three studies in this thesis. Focusing on the research methodology for the first and second study, this chapter reviews the qualitative semi-structured interviews that were carried out with high-achieving dyslexic adults and dyslexia experts. The methodology (IPA) will be covered in depth, showing the 5-step method used to convert raw interview transcripts into the super-ordinate themes.

Chapter 4 shows the results, themes and trends from study 1 conducted with high-achieving dyslexic adults. This chapter outlines the main super-ordinate themes from these interviews, as well as their classification into different ‘areas’ of strengths covering: work, cognitive and inter-personal strengths. One of the limitations of study 1 was how these themes could be generalised across a larger sample of dyslexic adults. Therefore study 2 was carried out in order to address this limitation.

Chapter 5 provides the results, themes and trends from study 2; interviews conducted with experts in the field of dyslexia research. This chapter outlines the support of the themes found in study 1 as well as additional themes based on the perspective of experts. Limitations of study 2 included; the issue of self-reported strengths by the dyslexic high achievers and experts, as well as understanding how generalisable these strengths are across a larger group of dyslexic individuals. Study 3 was carried out in order to address these limitations.

Chapter 6 outlines and presents results from study 3; strengths across a student population; with dyslexic and non-dyslexic students from the University of Sheffield. Also covered will be the background literature on aspects of Work Psychology, specifically focusing on careers, job re-design and Holland’s vocational types as well as coverage in regards to strengths of dyslexia, focusing particularly on the ‘Big-6’.

Chapter 7 summarises the main findings from across all three studies, drawing together the conclusions. It will also provide reasons and arguments for the concluding statements which outline the original contribution to knowledge in relation to Positive Dyslexia and the workplace.

# CHAPTER 1: Dyslexia Theory and Practice

## Introduction

Dyslexia is a developmental disorder defined as:

*“A disorder in children, who, despite conventional classroom experience, fail to attain the language skills of reading, writing and spelling, commensurate with their intellectual abilities”*

([World Federation of Neurology, 1968](#_ENREF_136))

A more recent definition is:

*“Developmental dyslexia is characterized by an unexpected difficulty in children and adults who otherwise possess the intelligence, motivation and schooling considered necessary for accurate and fluent reading”.*

*(*[*Lyon, Shaywitz, & Shaywitz, 2003*](#_ENREF_70)*)*

In terms of the prevalence of dyslexia, it has been considered ([Badian, 1984](#_ENREF_8)) four times more common in males than in females, affecting 4% of the population severely across Western societies, regardless of their social-economic status, race or level of intelligence. [Pennington (1991](#_ENREF_91)) observed that 10% of the US population showed some signs of dyslexia, particularly when observed and subsequently compared with their family members.

The particularly challenging paradox for psychologists to explain is this: how can an able and intellectually capable individual be shown to demonstrate such difficulties with one of life’s most routine skills, one such as reading?

## How does Dyslexia Manifest Itself?

There is no doubt that dyslexia is noticeably prevalent in the population. Reading involves the combination of many processes, at the very least, it involves eye movement control, automatic word recognition and speech monitoring ([Nicolson & Fawcett, 2008](#_ENREF_86)). Even though the acquisition of this skill takes thousands of hours of practice and considerable effort, most people tend to master the ability. Natural variation has, however, led to the existence of individuals who do not acquire this ability at the same level as others. This variation is described as Dyslexia. Dyslexia is thought to display its effects mostly during the period of childhood, with a common misconception being that the symptoms lessen with age. It is clear, however, that dyslexia still remains well into adult years. There is also according to Nicolson (2015) substantial agreement that dyslexia is a heterogeneous ‘syndrome’, not only with differing symptoms away from the core problem of reading, but also with overlaps to other developmental disorders, for example comorbidity between dyslexia and ADHD ([Willcutt & Pennington, 2000](#_ENREF_129)).

It has been suggested ([Hoffman, 1987](#_ENREF_57)) that adults with dyslexia live under constant pressure of satisfying expectations from a variety of sources, particularly in relating to gaining and retaining employment. Reid & Kirk (2001) also note that even once dyslexic adults have secured heir jobs they have to ensure they still fulfill the expectations of their employers.

Sally Shaywitz, Director of the Yale Center, highlights the paradox of dyslexia, illustrating it, in a Scientific American article, by the little girl who cannot read the word ‘volcano’ but is able to give a fluent description of what a volcano is - "*Oh, a VOLCANO, it's a big mountain with a hole on top that fire and smoke come out of and lots of hot lava that flows over everything..."* ([Shaywitz, 1996](#_ENREF_108))

She also provides a case study of Gregory, who had extreme difficulties in reading and in rote memorization, but nevertheless was able to perform at high academic levels,

These are prototypical cases for the strengths of dyslexia. I will give many such case studies in the second chapter.

*“Although he had been diagnosed as dyslexic in grade school, Gregory had also been placed in a program for gifted students. .... and eventually received offers from several top medical schools.*

*Now, however, he was beginning to doubt his own competence.*

*He had no trouble comprehending the intricate relations among physiological systems or the complex mechanisms of disease; indeed, he excelled in those areas requiring reasoning skills.*

*More problematic for him was the simple act of pronouncing long words or novel terms (such as labels used in anatomic descriptions); perhaps his least well-developed skill was rote memorization”.*

([Shaywitz, 1996](#_ENREF_108))

These are prototypical cases for the strengths of dyslexia.

*Dislecksia the Movie*

Arguably the most directly relevant use of the talents of dyslexia is by Harvey Hubbell, a dyslexic filmmaker. Harvey has created a full-length film on dyslexia, Dislecksia the Movie, the damage it causes to self-esteem, the lack of understanding of the general population, and the large numbers of highly successful dyslexic adults. This is his own personal statement of his early years, together with an analysis by Gordon Sherman, a leading academic and educator for dyslexia.

Both highlight the unexpectedness of the difficulties, and the trauma caused in early school (and after).

*Quotations from Dislecksia the Movie*

*”I was a happy kid. I grew up in the early 60s. Life was good back then. I had a spring in my step and not a care in the world … I was like every other kid … life was good. And then I went to school. I did NOT have a great time at elementary school. I moved from a happy kid to a child with severe perceptual problem"* ([Hubbell, 2012](#_ENREF_60)).

And then a quote from Gordon Sherman, the very influential dyslexia researcher and now educationalist.

*"Pre-school, kindergarten, first, second grade this kid who’s dyslexic has been doing fine. Third grade - bang hits the wall, and all at once this kid is not able to do what the other kids in the class are doing. And starts to wonder “what’s going on here?” And things get worse and worse"* ([Hubbell, 2012](#_ENREF_60)).

Both of these quotes highlight the unexpectedness of the difficulties, and the trauma caused in early school and after.

## Differences Between Dyslexic Children and Adults

The key difference between dyslexic children and adults is that in children, the core task is learning to read whereas for adults the core task is succeeding at work. McLoughlin (2002) particularly draws insights together to how dyslexic adults can adapt their work circumstances in order that they can minimize their weaknesses and tailor their work towards their strengths. It has been suggested that adults with dyslexia live under constant pressure of satisfying expectations from a variety of sources, particularly in relating to gaining and retaining employment (Hoffman et al., 1987). Reid & Kirk (2001) also note that even once dyslexic adults have secured a job they have to ensure they still fulfill the expectations of their employer.

## Associated Difficulties of Dyslexia

Dyslexia is usually described in relation to difficulties in the acquisition/performance of various skills. In particular, reference in discourse is usually made to the reading problems, poor spelling skills and general slowness in processing symbolic information of those with dyslexia, cited by [Everatt, Steffert, and Smythe (1999](#_ENREF_30)) (Miles, 1993). The literature also describes deficits (at least in some dyslexics) in certain aspects of planning, sequencing, motor coordination, attention, and memory ([McLoughlin, Fitzgibbon, & Young, 1994](#_ENREF_71); [Plaza & Guitton, 1997](#_ENREF_95); [P. H. Wolff, Michel, & Ovrut, 1990](#_ENREF_134)).

Within the research, there is persistent evidence that dyslexic children have associated problems with skills that are quite independent of phonological processing. Among these other skills, anecdotal evidence suggests that they include forgetfulness, distractibility and clumsiness, which all tend to accompany dyslexia ([Augur, 1985](#_ENREF_6)). Since the research undertaken is primarily brain based, the research continues to study these factors in relation to adults, but takes on a different focus. In view of the range of deficits, however, almost all the research on dyslexia has been concentrated and focused upon young children, and considerable progress has been made on the remediation of a child’s reading problems, particularly if dyslexia is diagnosed early. A feasibility study, undertaken by [Nicolson, Fawcett, and Miles (1993](#_ENREF_87)), on the subject of employability and dyslexia, states that current estimates suggest one child in five is diagnosed with dyslexia. In previous decades, there was a less substantial diagnosis of dyslexia, as well as an active discouragement from educational authorities that dyslexia existed. Due to the evidences, it is likely that less than 10% of the population of adult dyslexics have been officially diagnosed ([Nicolson, Fawcett, Pickering, Vanleij, & Radill, 1992](#_ENREF_84)).

There is evidence to support the idea that the diagnosis of dyslexia can have a powerful motivational effect on the individual, as well as an enlightened understanding of their problems when the diagnosis is accompanied by access to valuable sources of advice, support and understanding ([Hampshire, 1991](#_ENREF_53); [Miles, 1993](#_ENREF_74)). On the other hand, failure to diagnose effectively may subsequently lead to two further effects ([Nicolson et al., 1992](#_ENREF_84)). The first effect can lead towards disruptive behavior and juvenile offences in adolescence and adulthood ([Cornwall & Bawden, 1992](#_ENREF_18)). The second effect may be seen at the career level, whereby wrong diagnosis could cause a dyslexic adult to select a career for which he/she will not be so well suited.

The potential to lead a dyslexic individual into feeling ‘trapped’ in a job could be seen as directly leading them to become unable to ‘function’ effectively (Nicolson & Fawcett 1992). There can, therefore, be considerable challenges posed to colleges, universities, vocational training providers and careers advisors, as they are unable to effectively advise and provide guidance in career direction ([McLoughlin, Leather, & Stringer, 2002](#_ENREF_72)) given the absence of a diagnosis.

A suggested method for helping dyslexic adults become more empowered is by enabling them to understand their dyslexia and, in turn, to understand how it leads to the common dyslexic behaviors which they may experience, most of which are considered negative ([Fitzgibbon & O'Connor, 2002](#_ENREF_35)). There are very few existing definitions of dyslexia which make sense when applied to the context of the workplace and the experience of adult dyslexics in this setting. Focusing on brain differences, for example, is not entirely appropriate when considering the workplace. The process of framing dyslexia within a medical model starts at school, where a child may be failing to adequately read and write and is then interpreted, by teaching and educational psychologists, as showing evidence that there is something wrong with the individual.

There are still misleading and highly prevalent misconceptions that dyslexic people are unable to read, write or spell adequately. There are many diagnosed dyslexics whose reading, writing and spelling abilities may be of a lower standard than they should be in relation to their peers, however they still display average levels of intelligence. Consequently they do not stand out in day-to-day situations, as do those dyslexics whose literacy skills are weak and thus the misconception that dyslexia is purely in relation to poor literacy skills. Many of those people do, however, stand out in workplaces because of other dyslexic weaknesses which they may display. These are often seen to undermine their ability to do their jobs efficiently. This relates to the previously mentioned theory of ‘Automatisation deficit’ (Nicolson & Fawcett 1990), where the other skills take longer to develop and can be perhaps weaker, compared to others without dyslexia. Therefore, it is these factors to which I refer that are noticeable in the work place.

When comparisons are made between an adult’s level of ability to read or write it can lead to the belief that dyslexics are of low intelligence, which subsequently could lead to false accusations that they are therefore unlikely to succeed in terms of academic and occupational achievements. Many of those who may be ridiculed on this basis, for failing in academic subjects, often then receive considerable negative feedback from their peers, teachers and parents, further undermining their self esteem, confidence and motivation ([Fitzgibbon & O'Connor, 2002](#_ENREF_35)). Studies undertaken by [McLoughlin et al. (2002](#_ENREF_72)) have shown that through training and counseling some of these problems are ameliorated, and increasing a dyslexic person’s control of their social and work environments contributes to their overall success. McLoughlin et.al also describe that adults with dyslexia live under constant pressure to satisfy the expectations which stem from a variety of sources, especially in relation to gaining and retaining employment and also the expectations of employers once jobs are secured.

Returning, as mentioned previously, to the concept of the acquisition of skills, it may therefore be observed that in order to survive psychologically as individuals, there will need to be a focus on developing particular abilities in accordance with and aligned to the innate strengths of the individual presented.

## Causal Theories of Dyslexia

### Overview

There have been numerous theories seeking to understand the causal issues relating to dyslexia. At the behavioural level, the problem is reading. These are classified at various levels, such as the cognitive, brain and genetic. The cognitive and brain level are what I will briefly outline in this section of the literature review:

At the Cognitive level, numerous theories explain the deficit at the level of a causal explanation. The Phonological Deficit Hypothesis states that reading difficulties are attributable to problems in phonological processing (breaking a word down into its constituent sounds). Also the Double Deficit Hypothesis (Wolf & Bowers 1997), which states that dyslexic children suffer from two crucial deficits; phonological processing problems and rapid processing problems.

According to [Nicolson (2015](#_ENREF_77)) p20, theories which are discussed at the level of the brain attempt to explain cognitive deficits in terms of brain structure. Visual and Magnocellular Deficit Hypothesis states that there are difficulties in processing rapidly changing visual stimuli and auditory stimuli, therefore it is these abnormal Magnocellular pathways which cause reading problems ([Galaburda & Livingstone, 1993](#_ENREF_39); [J.F Stein & Walsh, 1997](#_ENREF_116)). A second brain-level theory is the cerebellar deficit hypothesis (Nicolson, Fawcett & Dean, 1995, 2001). Cerebellar Deficit Hypothesis suggests that dyslexic children show a range of ‘soft neurological signs’. The authors argue that it explains and includes deficits at the cognitive level and also provide a causal explanation at the level of the underlying brain structures.

The Automatisation Deficit Hypothesis (Nicolson & Fawcett 1990) is a learning hypothesis which states that dyslexic children will have difficulties on any task that requires automatisation of skill and that even on a task where they appear to be performing normally they have to try harder to achieve the same results.

### Phonological Deficit Hypothesis

At the theoretical level, the dominant causal hypothesis remains that of phonological deficit ([Stanovich, 1988](#_ENREF_114)) which identifies significant delays in the acquisition of phonological skill in dyslexic children leading directly to problems in learning, phonics based reading programmes for dyslexia. It proposes that the reading difficulties are attributable to problems in phonological processing, that is breaking the words down into constituent sounds. These difficulties cause problems in sound segmentation and also in word blending, both of which are critical for the development of reading and spelling (Nicolson 2015). There has been extensive research on phonological deficit. Towards the late 1970s, the association of language rather than visual causes ([Vellutino, 1979](#_ENREF_121)) and a recognition of phonological awareness, which included how rhyme and phenome manipulation skills ([Bradley & Bryant., 1978](#_ENREF_11)) failed to be acquired, were considered as perhaps being the underlying cause for reading problems. These phonological problems also included the recognition of constituent sounds that formulate words, retaining linguistic and verbal material, as well as other phonological skills, such as short-term memory. Phonological impairments have also been hypothesised to underlie a failure in developing an independent functioning module at the word-recognition level ([Stanovich, 1988](#_ENREF_114)) that may in turn be crucial for mastering the skill of reading. It has been observed that for those children learning to read, when assistance had been given to relieve their symptoms related to phonological difficulties, had gone on to show improvement in some ways during later life ([Lundberg, Olofsson, & Wall, 1980](#_ENREF_69)).

The phonological processing deficit is widely thought to be the primary cause of dyslexia ([Vellutino, Fletcher, Snowling, & Scanlon, 2004](#_ENREF_122)). Nicolson (2015) argues, however that it fails to explain the other symptoms which are simultaneously observed, especially in relation to adult dyslexia, and are not associated with merely the problem of reading. He further states that the phonological deficit is by no means the only relevant theory, but that there are actually many other cognitive level theories, some narrower, some broader. Each one of them has merit with supportive evidence and also successful remediation studies. Some of these theories are described below.

According to Nicolson (2015) however, interventions have seemed to be very much less effective than hoped, and the scientific research aimed at establishing the causes of the fundamental problems in the ‘phonological module’ has proved to be inconclusive. The explanation of how phonological deficits arise is still not clear and only claims that there are essentially three related problems – phonology, working memory and ‘critical timing capabilities’. Nicolson (2015) argues that since speed and working memory are considered to be more fundamental information processing capabilities than phonology ([Demetriou, Christou, Sanoudis, & Platsidou, 2002](#_ENREF_25) ) this suggests that the appropriate place to look for any underlying causes would be in the development of speed and working memory.

### Double Deficit Hypothesis

In this theory the phonological processing deficits are still acknowledged, but also includes a secondary rapid automised-naming deficit, hence the name ‘double deficit’. [Wolf and Bowers (1999](#_ENREF_133)) found that a child displaying symptoms of both deficits had a significantly worse educational outlook than a child with just one deficit. The theory as a whole may be able to only provide an explanation for more severe cases of dyslexia as it acknowledges that the deficits can occur in isolation or together. Children with dyslexia were seen to perform poorly upon measures of rapid naming and using the cognitive processes necessary for the fast identification and retrieval of visual linguistic skill ([Nicolson & Fawcett, 1994](#_ENREF_79)).

This theory does not necessarily improve or make much of a difference to the lives of adult dyslexics. However it may be applied to those who have a severe form of dyslexia, who may not necessarily have received assistance in childhood and therefore may be seen in a subpopulation of the unemployed.

### Visual and Magnocellular Deficit Hypothesis

The magnocellular deficit hypothesis is the most prevalent brain-level hypothesis (Nicolson 2015 p.20). The cognitive impairments shown in dyslexia are thought to be caused by deficits in the magno-cellular visual pathway and are explained at a biological level (level of the brain). The reading impairments may be caused by visual problems, such as a lack of capacity to stabilise and fixate vision ([J. F. Stein, 2001](#_ENREF_115)). As demonstrated in the literature this theory centers its research on the idea that reading is a visual process. It introduces this idea by explaining that in other sensory problems of dyslexia the abnormalities are not confined to one pathway but are seen as multi-modal and causing cerebellar, visual and auditory impairments, which led to reading, motor and phonological deficits.

To reiterate, with such a theory relating to diagnostic and medically based explanations, it shows that as none of the theories are necessarily being disproven, neither do they fully explain the presence of other symptoms and deficits observed in dyslexia. Therefore, without much relevance to the adult dyslexic when reaching adulthood, it would relate to an explanation of the severity of a person’s dyslexia, rather than helping to build upon a positive framework which enables that individual to make the best of their abilities and what they can do.

Research which began to consider that the disorder may be a result of a failure, or an alternative way of learning, to the methods employed by the typically developing child, are described below. This relationship to learning may account specifically for and support the ability to explain the variety of learning techniques available, and could in turn provide explanations of how adult dyslexics may choose certain jobs.

### Cerebellar Deficit Hypothesis

Another brain level theory is that of the cerebellar deficit hypothesis. The cerebellum is one of the major organs in the brain. [Nicolson et al. (1999](#_ENREF_82)) developed a second part to the twin layer theory, with the idea that the first layer relates to the automatisation core deficits in skill acquisition, and the second layer relates to the cerebellum abnormalities seen in dyslexia. It is the second layer that assumes a neurological explanation of what the automatisation deficit hypothesis describes at a behavioural level. It is seen that, in relation to dyslexia, the cerebellum may be responsible for poor motor control and skill learning.

## Procedural and Declarative Learning

Before outlining the automatisation deficit theory, two definitions need to be made explicit. That of Procedural learning; which involves acquisition of a skill through repeated performances and practices, and Declarative learning; acquiring information that one can speak about. The difference between automatic and controlled processing is central to the cognitive learning model, which has been shown to apply at the level of acquisition of mental and physical skills (Nicolson 2015). Declarative learning is available to conscious introspection, usually language-based. As opposed to procedural, which uses the lower-level brain processes no accessible to consciousness. Nicolson claims that dyslexic people often have distinct strengths in declarative skills (2015).

### Automatisation Deficit Theory

In a distinctive dyslexia research programme, Nicolson and Fawcett have probed the learning processes of dyslexic children in a range of studies over the course of two decades. During early research stages, they established that many dyslexic children had difficulties in making skills automatic, even for skills outside the literacy domain, leading to their automaticity deficit hypothesis ([Nicolson & Fawcett, 1990](#_ENREF_78)); that is, that dyslexic children have significant problems in developing unconscious, automatic habits and therefore must ‘consciously compensate’ for lack of automaticity, even in routine skills. In later work they demonstrated that the problem arose from difficulties in the ‘procedural learning’ system. A clear demonstration of this stemmed from their response blending study ([Nicolson & Fawcett, 2000](#_ENREF_80)), in which two studies of adolescents, one comprising dyslexic children and the other a group of normal children (yet both matched in age and IQ), undertook long-term training on a keyboard spatial task and a choice reaction task respectively. They concluded that the dyslexic children, following extended training, had normal levels of ‘strength’ of automatisation, but that their initial and their final performances were impaired. These sets of data led Nicolson and Fawcett (2007) to further develop their automatisation deficit framework to derive the ‘specific procedural learning deficit’ hypothesis, which states that dyslexia is associated with specific difficulties in procedural learning (especially in language-related skills), whereas their declarative learning of facts is unimpaired, and in which they may perhaps be over performing. There has been extensive support for this dissociation, with a range of studies revealing problems in implicit learning and procedural learning ([Gabay, Schiff, & Vakil, 2012](#_ENREF_38); [Menghini et al., 2010](#_ENREF_73); [Nicolson, Fawcett, Brookes, & Needle, 2010](#_ENREF_83)) A recent study ([Hedenius, Ullman, Alm, Jennische, & Persson, 2013](#_ENREF_54)) actually showed superior performance for the dyslexic group on an old/new declarative memory test.

The acquisition of reading is not viewed as a skill that we have adapted to learn through evolution ([Nicolson & Fawcett, 1990](#_ENREF_78)), therefore it is likely that learning processes are involved. It is thus suggested that these learning processes could affect the automatisation of other skills, as well as being the underlying cause for deficits in reading. [Nicolson and Fawcett (1990](#_ENREF_78)) argue that even during tasks in which the results of dyslexic children match those of control children, the dyslexic children tend to have to try harder to achieve the same results. Henceforth, any tasks undertaken may be impaired as a result of these automatisation deficits.

Research undertaken, which looked at a range of deficits relating to balance, ([Fawcett & Nicolson, 1992](#_ENREF_32)) concurrent counting, motor skills and rapid processing ([Fawcett & Nicolson, 1992](#_ENREF_32), [1995](#_ENREF_33)), showed there to be an impairment in the case of dyslexic children. These results may provide us with interesting insights into the potentially very challenging world of a child with dyslexia. Learning, in fact, may be a very different and difficult experience for dyslexic individuals. [Nicolson and Fawcett (2000](#_ENREF_80)) implied that a dyslexic person would require a significantly longer period of time to learn a new skill compared to the average individual. With this in mind it would support the investigation of strengths in dyslexic adults. Given the evidence supporting the automatisation deficit theory, it suggests that skills can take a significantly longer time to develop in a dyslexic individual compared to a non-dyslexic individual.

## Negative Outcomes for Dyslexia Beyond the Reading Domain.

For the majority of dyslexic individuals, the outcomes are disadvantage with disproportionate numbers of dyslexics ending up with low literacy skills, unemployed, as prison inmates, emotionally scarred or under-achieving. A report undertaken by [Hewitt-Main (2012](#_ENREF_56)) based on interviews with 2029 prisoners at Chelmsford Prison showed alarming results. 53% of the prisoners at Chelmsford were diagnosed with dyslexia, compared to 10% of the UK population. Hewitt-Main found that those learners who had experienced difficulties in the classroom when they were children developed self esteem issues and a sense of failure and frustration. This then led to behavioural problems, school exclusion, inability to find jobs, apply for benefits or pass theory driving tests, spiraling into petty offences, a life of crime, prison and serial reoffending.

## Strengths and Limitations of Existing Dyslexia Research

The bulk of existing dyslexia research analyses the causes of dyslexia from the disability perspective, taking a variety of approaches at the level of the cognitive, brain and genetic level. These are outstanding contributions to better understanding the underlying the causes of dyslexia. These theories and methods were designed to identify the underlying weaknesses in dyslexia and have been applied particularly in the assessment of dyslexia in both children and adults. Interestingly, the definitions of developmental dyslexia given at the start of this chapter highlight the discrepancy between the child’s reading ability and that expected on the basis of his or her intelligence.

However, as stressed by Nicolson (2015):

*“If there is a discrepancy between reading and other skills, then there are relative strengths in areas outside reading. The basis of Positive Dyslexia is that if we identify these strengths, and attempt to develop them further, this will be of great benefit to the individual concerned.”*

## Dyslexia in the Workplace

It has been suggested by [Hoffman (1987](#_ENREF_57)) that adults with dyslexia live under a constant pressure to satisfy expectations from a variety of sources, particularly in relation to gaining and retaining employment. Even after they have secured jobs, for dyslexics in particular, there is a continuous need to ensure that they fulfill the expectations of their employers on an ongoing basis (Reid & Kirk 2001). In a US study consisting of almost 400 adults with dyslexia and 1000 service providers, [Hoffman (1987](#_ENREF_57)) found that specific job training was one of the most crucial needs, as identified by the group, for dyslexic employees. Hoffman’s study also suggested that dyslexic adults may not have a full understanding about themselves in terms of their strengths and weaknesses, yet in many cases such knowledge is crucial to the processes of selecting appropriate employees for a particular job and also in the maximisation of skills during job training (Reid & Kirk 2001).

According to McLoughlin et.al (2002) p.178, there remains a need for a fundamental shift in thinking on behalf of professionals, researchers, and within organisations (including employers), concerning how best to provide for dyslexic people. If dyslexics are to be adequately included in the workplace,the emphasis should be on empowerment and enablement rather than a negative model of disability that perceives the dyslexic as a ‘victim’. This could also however be said to be the same for all people with a disability or condition of a similar kind. McLoughlin goes on to explain that empowerment comes from the following: Firstly, from self-understanding; dyslexia is often referred to as a ‘hidden disability’ and therefore many are in a position of needing to advocate for themselves, which can only happen if they have a good understanding of the nature of their difficulty and their needs. Secondly, there is a need for them to be understood by others, particularly their employers, as they may find themselves to be excluded in the work environment if their managers and colleagues have a misunderstanding of the nature of their difficulties ([Reid, 2010](#_ENREF_97)).

Being dyslexic is not necessarily a barrier to occupational success. Some occupations tend to be more dyslexia-friendly than others, tapping into dyslexic people’s strengths rather than their weaknesses (McLoughlin 2002). However, there are undoubtedly dyslexic adults who are working in the wrong jobs that do not properly accommodate them. When this occurs, dyslexics find themselves in a situation where the demands they face to perform tasks which they find difficult ultimately outweighs the strengths which they possess to deal with them. Dyslexia is very often misunderstood, and so the difficulties they may face at work can often be exacerbated given that sometimes these challenges are not always obvious to employers and coworkers. McLoughlin also describes that, since many dyslexic people have survived the ‘traumas of the school system’ and have managed to come out the other end (sometimes with very few qualifications), they find the process of ‘learning on the job’ more effective as opposed to book learning. As they deal with the problems they face in the workplace, they may also develop certain coping strategies that mask their weaknesses. Examples of this avoidance strategy include avoiding a situation or task that involves a lot of literacy, or learning to develop techniques, which ensure they don’t get ‘caught out’ for inadequate organisation skills, among a plethora of others.

One of the major influences increasing the wider interest around dyslexia during adulthood has been the introduction of the Disability Discrimination Act 1995. ([British Dyslexia Association, 2013](#_ENREF_12)) [online]. Section 1 of the Act defines a ‘disabled person’ as a person with ‘physical or mental impairment’ that subsequently has a substantial and long-term adverse effect on his ability to carry out normal day-to-day activities. Dyslexia is not listed as a disability in the Act, but can be covered by the heading of a disability, which affects ‘memory or ability to concentrate, learn or understand’.

*“Someone who has good academic qualifications, and advanced literacy skills but needs to get to work much earlier then everyone else, and leave later in order to complete all the tasks that would be required on a normal day, is being affected on a day-to-day basis.”*

*(*[*McLoughlin et al., 2002*](#_ENREF_72)*)*

Self-advocacy is particularly important for dyslexic individuals. As dyslexia is described as a ‘hidden disability’, McLoughlin outlines that their difficulties are less obvious and less well understood. The issue of ‘disclosure’ has become a very prevalent issue, with ongoing debates regarding whether a dyslexic person should be required inform their employer or prospective employer that they are dyslexic. When making the personal decision to disclose or not disclose their dyslexia, a number of factors come into play which may assist them to become effective self-advocates for their dyslexia, which includes; knowing strengths, knowing weaknesses, knowing what situations to avoid and being selective about the disclosure of their dyslexia.

In relation to the workplace, as well as measuring the weaknesses and addressing those issues in relation to dyslexia, studies have also been conducted which relate specifically to the success which arises as a result of dyslexia. As previously mentioned, a recent study concluded that people with dyslexia undertake higher levels of planning and metacognition, reporting higher levels of job satisfaction and self-efficacy ([Leather et al., 2011](#_ENREF_67)). The study in question, undertaken by Leather et al. (2011), was designed to determine whether quantitative support could be provided for the model of adult dyslexic success, derived from the work of Gerber and his colleagues (Gerber, Ginsberg, & Reiff, 1992). This study bodes well for a positive approach to dyslexia research, as it advocates that from a more ‘positive’ perspective (i.e. by measuring success) we are by default giving solutions to help improve weaknesses as well as develop strengths. Certain literature however, claims that despite possible success dyslexic children who grow up to be relatively successful dyslexic adults may still be at risk of discrimination in educational and occupational settings, both professionally and emotionally, despite their good compensatory strategies ([Gregg, 2009](#_ENREF_50)) *[cited by Leather et al. 2011*].

For individuals with dyslexia, opportunities to thrive in the workplace are now more plentiful than ever. Advances in technology have made it easier for individuals with dyslexia to access printed information, express their ideas in writing and remain both organised and on schedule. With self-understanding, self-advocacy, support, persistence and careful planning, individuals with dyslexia can confidently pursue any occupation which would suit both their interests and abilities. The experience and wealth of information, regarding support of dyslexic adults in the workplace, has been gathered together and structured in an organised fashion over the past few decades. Key contributions include those by Reid & Kirk (2001) in particular, whose works provide more detail about the support and other workplace factors which affect dyslexia.

Other aspects to take into account, which relate to the themes of success and finding strengths, are concepts such as job satisfaction, self-efficacy and goodness-of-fit. As cited by [Leather et al. (2011](#_ENREF_67)), [Gerber (2002](#_ENREF_41)) introduces the success model, which includes the concept of goodness-of-fit, where there is a match found between the demands of the job and the individual’s particular skills and abilities, and also the concept of social ecologies, where being in the right environment will lead to more positive feelings from the individual about their work. Being in the right job, where they can efficiently meet task demands, should enable dyslexic’s to utilise their strengths and circumvent any weaknesses ([Gerber, 2002](#_ENREF_41)).

Of special interest, is the relationship between dyslexia diagnosis before entering work, in one instance during the University period. In a UK study of over 100 institutions, 43% of the total dyslexic student population were diagnosed as dyslexic after admission to university ([Singleton, 1999a](#_ENREF_111)).

Reid & Kirk (2001) argue:

*“There is a need to ensure that the two-way process of diagnosis and liaison with employers is in place, as it is just as important to prepare the employer as it is the student.” (p9)*

Given that dyslexic students who achieve entry to higher education may have more accomplished compensatory strategies that those who fail at school, the figure for undiagnosed dyslexic young adults would likely be well in excess of 1% of the school leaving population (Reid & Kirk 2001). It is not uncommon for dyslexic students to find themselves in a course which highlights their weaknesses and further undermines their confidence. It is important that dyslexic students obtain effective career advice and it is crucial that the demands of the course are made clear to them at the outset. In the study conducted by Kirk and Reid (1999) this aspect was raised as being of crucial importance. The relevance of mainstream school curriculum to employment skills is a key factor to the success of adult life. Research findings have provided striking conclusions concerning the transitional period of dyslexic adults to successful employment. Hoffman et al (1967) study identified a mismatch between curricular and employer needs. According to Nosek (1997), two of the top determinants for work success are: work experience during secondary school and vocational education during secondary school.

## Work Strengths and Success in Adult Dyslexics

One potentially important source of converging evidence regarding the strengths of dyslexia is the literature on career choice and success in dyslexic individuals. In terms of career choice, the data is rather sparse. A study by [U. Wolff and Lundberg (2002](#_ENREF_135)), comparing the signs of dyslexia shown by Swedish art academy students and non-art students (studying political science, economics, Psychology, engineering etc), reported a significantly greater incidence of dyslexia (as assessed by four and word chains reading) in the art students (8.8% vs 2.5% for a criterion of self report plus phonological skill), which was around 3 times higher than non-art students.

An early study by [Gerber, Ginsberg, and Reiff (1992](#_ENREF_42)) followed up 46 successful and 25 moderately successful students with learning disabilities (LD) and found that the overriding theme was that of control and that control was sought through the pursuit of two sets of themes: internal variables (desire, goal orientation, and reframing) and external variables (persistence, goodness of fit, learned creativity and social ecologies). Those adults with LD who were deemed highly successful showed extensive use of each of the variables in the above model, both individually and collectively.

In a recent study by [Gerber and Raskind (2013](#_ENREF_43)), they provide an in-depth observation of 12 individuals with dyslexia and other learning disabilities whose lives are characterized by major accomplishments and contributions made in their respective fields. These men and women are from a variety of professions, describing their experiences with dyslexia and reflections on contributions towards their success within their respective fields.

Gerber & Raskind (2013) describe the importance of re-interpreting the learning disability experience as a positive one, celebrating strengths, while knowing full well one’s weaknesses. Successful reframing allows for the possibility of accomplishment and also links to all the external elements of the model for success. Moreover, reframing has stages of its own, they are: first acknowledging that the learning disability is real and has its specific challenges; second, understanding ones own learning disability profile; third, accepting all of the dimensions of the learning disability and last, planning for functioning in the variety of adult domains while fully accounting for the learning disability itself. This supports the claim for a better understanding of one’s own ‘profile’, taking into account the weaknesses but fundamentally also acknowledging strengths.

In the late 1980s Gerber investigated a large number of highly successful adults with learning disabilities in order to discover what drove their success. Some of these individuals were high-profile professional scientists, entrepreneurs, bankers and business people who had achieved notoriety in their field and were considered exemplars among their peers ([Gerber et al., 1992](#_ENREF_42)).

Related studies by Raskind and his colleagues ([Goldberg, Higgins, Raskind, & Hermann, 2003](#_ENREF_48); [Raskind et al., 1999](#_ENREF_96)) followed a group of 41 attendees at the Frostig Center (an educational institution offering education and support to children with learning disabilities based in California) over the course of 20 years, with a view to establishing which attributes were associated with career success. These included particularly notable ones such as for example, ‘Success attributes’ (self-awareness, proactivity, perseverance, appropriate goal setting, effective use of social support systems and emotional stability/emotional coping strategies).

[Leather et al. (2011](#_ENREF_67)) in their work also concluded that people with dyslexia who showed higher levels of planning and metacognition, reported higher levels of job satisfaction and self-efficacy. Interesting and plausible though these findings are, they are wholly consistent with the broader literature on career success, irrespective of dyslexia ([Judge, Higgins, Thoresen, & Barrick, 1999](#_ENREF_62)). Consequently, it is valuable to consider whether a link can be made to the extensive literature on the underlying causes and characteristics of Dyslexia.

In relation to the development of high literacy levels, [Fink (1998](#_ENREF_34)) highlighted that interest-driven reading was key to the development of such a skill. Results showed how, in distinct groups of successful professionals with dyslexia, literacy development was supplemented by avid reading in a content area of passionate personal interest, along with phonics instruction. When extensive reading about a favorite subject was increased, the background knowledge of these individuals enhances, fostering the development of reading fluency and increasing sophisticated skills. In a particular study, Fink undertook an interview and literacy assessment with 60 highly successful men and women with dyslexia as well as 10 peers without dyslexia ([Fink, 1998](#_ENREF_34)). Through avid reading on a specific topic, the individual with dyslexia developed knowledge of the specialised vocabulary, concepts, themes, typical text structures, and issues of a particular field in comparison with their dyslexic peers.

There has been particularly interesting research providing striking conclusions concerning the transitional period of dyslexic adults to successful employment. According to [Nosek (1997](#_ENREF_88)), two of the top determinants for work success are: work experience completed during secondary school and vocational education received during secondary school. These two determinants, accompanied by an assessment of strengths sooner rather than later, would greatly aid the transition of dyslexics from schooling, to higher education, to the workplace, and so on. It has the potential to drastically improve the lives of many dyslexic individuals and move many such individuals from unemployment into employment, thereby increasing the number of dyslexic adults who are working to their strengths and, in turn, leading happier and fulfilling lives.

## Conclusion

Dealing with dyslexia can be, in fact, a creative experience for both employees and employers, in that it entails a level of problem solving. The solutions can often be quite simple, effective and beneficial for an organisation. Nevertheless, the common understanding of dyslexia is based on a preconceived misunderstanding. For the vast majority of dyslexic individuals, the outcomes are negative with disproportionate numbers of dyslexics ending up with low literacy skills, unemployed, as prison inmates, emotionally scarred or under-achieving ([Hewitt-Main, 2012](#_ENREF_56)). As well as this there are dyslexic individuals working effectively and productively in jobs across the entire occupational spectrum. A number of dyslexic adults have achieved well in their personal and working lives, necessitating an acceptance of the view that dyslexia is not an insurmountable barrier to achieving success and that most dyslexics are in fact determined and hardworking individuals. Developments in neuroscience and cognitive psychology have shown dyslexia to be an information-processing problem. It is this difficulty that is inherited and persists across the lifespan of a dyslexic individual. Dyslexia can, therefore, present individuals with difficulties that extend beyond literacy. It can affect everyone differently, depending on further factors including family background, educational opportunities available and personality. Some of the areas which in particular can be challenging for dyslexic individuals is in Organisation, Time Management, Social Communication, Writing, Spelling, as well as Reading and Maths. Any of these factors can contribute towards and impact upon the working life of any adult in the workplace. However the effect for someone with dyslexia can prove destructive to an individual’s working life, especially if one’s work is dependent on any of these given factors; in most cases, all lines of work are affected by at least one of them. Therefore, it has become increasingly important to understand the career patterns of adults with dyslexia and to more fully appreciate how someone within the work environment can work to their strengths in order to master each of the day-to-day factors mentioned.

# CHAPTER 2: Positive Psychology and Positive Dyslexia

## Introduction

The previous chapter discussed the causal theories and the associated weaknesses in dyslexia. This chapter proceeds to discuss the area of Positive Dyslexia developed by Nicolson (2014), which combines approaches from two perspectives, Positive Psychology and Dyslexia. I will begin this section of the literature review with an overview of Positive Dyslexia followed by contributions from areas of Positive Psychology. Following this I will describe insights into the strengths of Dyslexia research undertaken to date from a range of various disciplines.

## Positive Dyslexia

As highlighted in the preface of this thesis, Positive Dyslexia founded by Nicolson (2014), takes inspiration from positive psychology ([Seligman, Steen, Park, & Peterson, 2005](#_ENREF_107)) with the aim to explore the potential benefits of a strengths-based approach to complement the prevalent remediation-based philosophy towards dyslexia. Its aim is to transform the image of dyslexia and the opportunities for dyslexic people at home, at school, at work and in society by focusing on the strengths of dyslexia and how dyslexic people can develop and celebrate their own strengths.

It starts from the premise that dyslexic individuals have their own ‘personal-best’ strengths’ and success will be greater when intrinsically motivated ([Deci, Ryan, & Koestner, 1999](#_ENREF_24)). A core feature of the approach is the identification and celebration of strengths, and so a major initial requirement is the further investigation of the strengths associated with dyslexia. Positive Dyslexia is also distinctive in that it starts with the adult rather than the child, with the career rather than the school experience, again complementing the traditional approach.

What appears to be the challenge at this point and what has become noticeable at the present time within the current framework of the strengths of dyslexia is that there are various perspectives on the different dimensions of strengths. There is no framework for categorising these strengths accordingly, with much more emphasis on the role of cognitive strengths of dyslexia (visuo-spatial strengths etc.), However what also needs to be taken into consideration, especially in light of the workplace, is the role of both social/interpersonal strengths as well as work strengths.

## Positive Psychology

Before the second world war, psychology had three distinct missions: to cure mental illnesses, to make the lives of people more productive, and to fulfill, identify and nurture talent. Since that time, much of the focus has concentrated upon on dealing with mental illness. This developed arrangement brought with it many benefits, yet the downside of this approach was that the other two fundamental missions of psychology, which would assist in improving the lives of all people and nurturing genius, were all but forgotten. What has been learned, over the last 50 years, is that the disease-focused model does not move the field closer to curing and preventing serious problems, but that in fact the major strides in prevention have largely come from a perspective focused on systematically building competency, as opposed to focusing on correcting weaknesses. What has been emphasised is that there are human strengths acting as building blocks against the development of mental illness: including courage, future-mindedness, optimism, interpersonal skill, faith, work ethic, hope, honesty, perseverance, the capacity for flow and insight, to name but a few ([Seligman, 2002](#_ENREF_103)). This hedonic approach to the way in which we look at human development is astonishing, begging the question as to why this idea has not been developed sooner alongside the pathological approach to studying human behaviour.

The field of positive psychology covers three broad areas. At the subjective level, it is about positive subjective experiences: which includes well-being and satisfaction (past) flow, joy, the sensual pleasures, happiness (present), constructive cognitions about the future- optimism, hope and faith. At the individual level, it considers the positive personal traits to include the capacity for love and vocation, courage, interpersonal skills, aesthetic sensibilities, perseverance, forgiveness, originality, future mindedness, high talent, and wisdom ([Seligman, 2002](#_ENREF_103)). At the group level, it is concerned with civic virtues and the institutions which assist to move individuals toward better citizenship such as elements of responsibility, nurturance, altruism, civility, moderation, tolerance, and work ethic ([Seligman, Ernst, Gillham, Reivich, & Linkins, 2009](#_ENREF_106)).

Early works of Seligman build on the role of prevention, including the theories of *Learned Helplessness* ([C. Peterson, Maier, & Seligman, 1993](#_ENREF_92))*, and Learned Optimism* ([Seligman, 2011](#_ENREF_104))*.* In his work, Seligman also signifies the need to develop and test interventions to build on strengths ([Seligman & Csikszentmihalyi, 2000](#_ENREF_105)).

The role played by practitioners is seen to be of paramount importance, in that they ought to recognise that much of the best work, which they do and accomplish in consulting rooms is based on the approach of amplifying their client’s strengths, rather than repairing their client’s weaknesses. Seligman also emphasises that practitioners working with families, schools, religious communities, and corporations should seek to develop climates that foster these strengths. Science and practice that relies on the positive psychology worldview may have a direct effect in preventing many of the emotional disorders, which exist in our society. Two side effects may also arise form such an approach: firstly, it may make the lives of individuals physically healthier given the insights on the effects of mental well-being on the body, and secondly, it will re-orientate psychology by refocusing on its two neglected prior missions, which in turn will make normal people stronger and more productive, as well as realising and ensuring the fulfillment of high human potential.

The premise of positive psychology, as well as the foundation of its aims, is to catalyze a change in psychology, moving from a preoccupation with repairing only the worst things in life to also focusing upon developing and realising the best qualities in life. To redress the previous imbalance, positive psychology aims to bring the building of strength to the forefront of the treatment and prevention of mental illness ([Seligman, 2002](#_ENREF_103)).

In relation to dyslexia, one could argue that the relationship between feelings of anxiety and depression in people with dyslexia relate to individuals who feel marginalised due to a disability. In fact, it would follow that dyslexics may become happier by having a better understanding of what their strengths are and subsequently measuring for degrees of anxiety and depression in relation to parallel development of strengths to see if this is a contributing factor. This is of course to be viewed on a case-by-case basis, however the concept of ‘fight and flight’ responds to noted feelings of anxiety experienced by young children, within a school system, and also adults, in relation to their jobs and workplaces, where concerns that their dyslexia will be ‘discovered’ and ‘found out’ can play constantly on someone’s mind- especially if they haven’t been able to inform their co-workers and managers of their dyslexia.

### Positive Emotions

The purpose of studying the broad scope of positive emotions is to enable the cultivation of such positive emotions within ourselves and those around us, not solely as an end in themselves, but also as a means of enabling psychological growth and improved psychological and physical health over time ([Fredrickson, 2004](#_ENREF_36)). The ‘Broaden-and-Build theory’, stemming from the work of [Fredrickson (2004](#_ENREF_36)) aims to capture the unique effects of positive emotion, whereby positive emotions appear to *broaden* people’s momentary thought-action repertoires and *build* their enduring personal resources. Such examples of positive emotions include joy, contentment and love. Indirect evidence, consistent with this hypothesis, can be drawn from a range of studies that have examined the cognitive and behavioural effects of positive affective traits and induced positive states.

The second central claim of the broaden-and-build theory is that experiences of positive emotions, through their broadening effects, build people’s enduring personal resources (Fredrickson 2004). Indirect evidence, consistent with this hypothesis, can be drawn from experimental studies of humans and animals that link positive traits and states (such as the state of play) to increases in a person’s physical, intellectual and social resources. Moreover, to the extent that positive emotions both *“broaden and build”* (Fredrickson 2004), over time they should lead to improved wellbeing. For example, if positive emotions broaden the scope of cognition and enable flexible and creative thinking, they also should facilitate coping with stress and adversity.

## Positive Psychology and the Workplace

Given the highly turbulent, yet nevertheless competitive nature, of today’s global economy, it seems that growth; excellence and maximising return on both financial and human capital are receiving increasing attention in the world of work. In line with the positive psychology initiative, management and organisational behaviour researchers have begun taking a more balanced perspective, by not only trying to fix the problems with dysfunctional organisations and employees, but also by taking a more positive, strengths-based approach to dealing with organisations and human resource management. The research area, seeks to deeper understand the strengths based-approach to organisations at both a ‘macro’ and ‘micro’ level. Examples of such macro-level organisations include The University of Michigan’s Centre for Positive Organisational Scholarship (‘POS’) and Gallup University’s Strengths-based Management, while examples of approaches operating at the micro-level (i.e. on the individual level), include positive organisational behaviour (POB), psychological capital (or PsyCap). The Gallup Strengths finder (Rath, 2007) identifies 34 core strengths, in 8 categories (Belief, Competer, Doer, Intellectual / Imagination / Individual, Leadership, Problem Solving, relaxed, Social, Teamwork). There has been a historical progression of Positive approaches to applied to the workplace over the past century. Original findings in organisational behaviour studies have provided support for the commencement of research in this area. It has been suggested that seeking to eliminate the bad or negative things associated with the workplace (such as low wages, poor working conditions and autocratic supervision) has not led to satisfaction and improved performance. In today’s workplace, the study of popular issues, such as work-life balance and diversity management, viewed through a negatively oriented conflict lens (e.g. focusing on how to eliminate frustration and stress) do not necessarily lead to or inform management research and practice on the positive effects of a balanced life or the potential advantages of a diverse workplace.

Overall, one of the key insights of Positive Psychology is that the life satisfaction scale isn’t the same for negative and positive experiences. Reducing negative experiences, or weaknesses, is completely different from having positive experiences or building strengths.

There is much relevance here therefore to dyslexia. As highlighted by Nicolson (2014), Seligman realised that depression was only considered in terms of negatives,. The same goes for dyslexia. It is seen by most practitioners in terms of weaknesses and therefore the predominant treatment to date has been to remediate the weaknesses. Nicolson does however describe his reservations about Positive Psychology and its application to dyslexia as mentioned in his iBook *‘Positive Dyslexia’*:

*“I do have reservations about Positive Psychology. It strikes me that it has the kernel of a brilliant idea, but at the moment it is incomplete - what if there isn’t a good existing approach? You seriously can’t get better at reading by only using learned optimism. You need to combine a determined and resilient approach with a good method, that suits your strengths of learning. That is, you need to get a synergy between Positive approach, and the traditional approach.”*

*(Nicolson 2014, p51)*

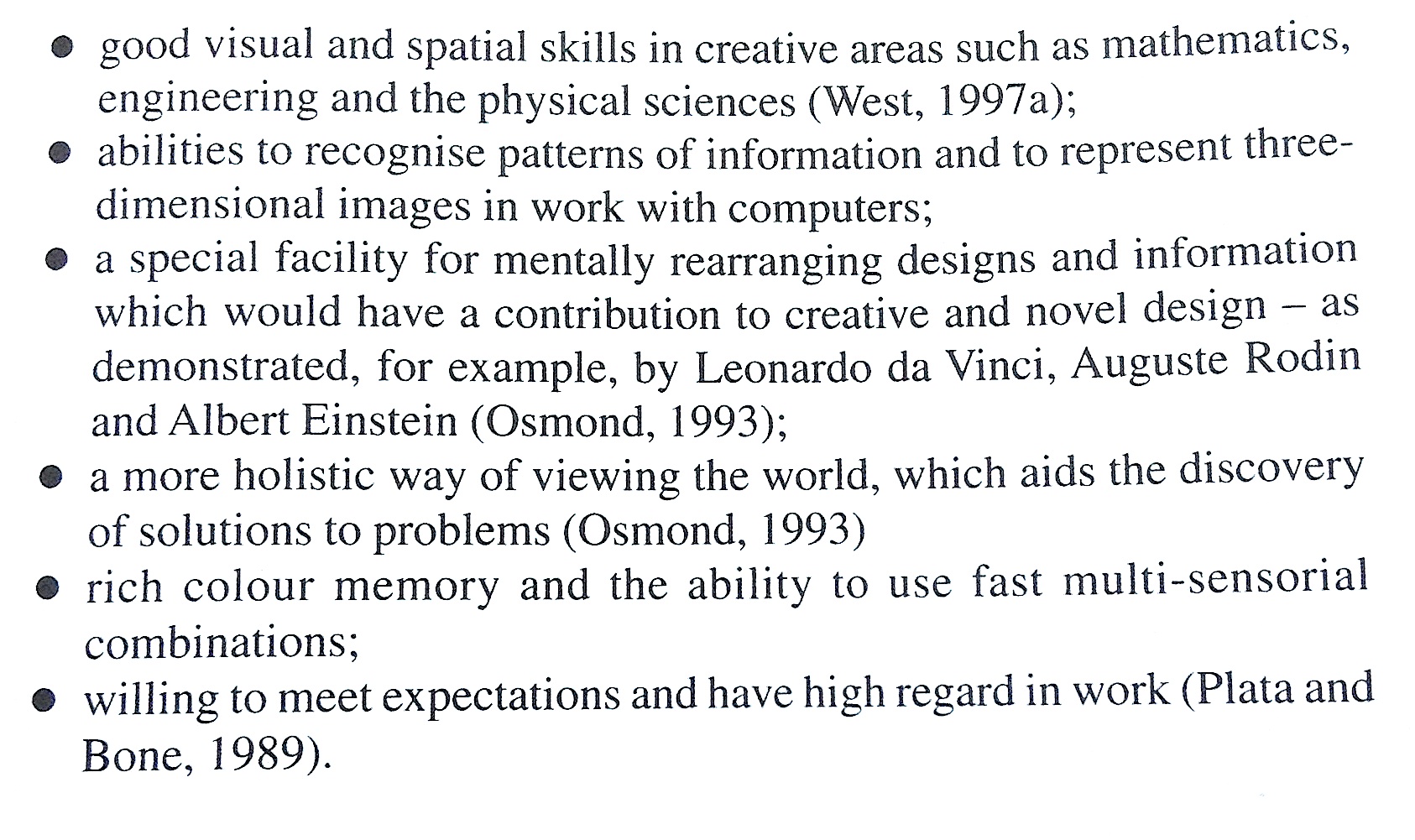
The aim of Positive Dyslexia is, therefore, to identify and empower people to work to their signature strengths which are unique to the individual, to then identify and guide them toward careers involving their strengths with better career advice and better diagnostic information. Finally, its aim is to empower and involve the stakeholders - the parents and the dyslexia associations.

## Movement Towards a Strengths Based Approach in Dyslexia Research

In the light of the heavy focus on the weaknesses of dyslexia as described in the previous chapter, the concept of identifying and developing dyslexic strengths needs to be given consideration ([Fitzgibbon & O'Connor, 2002](#_ENREF_35)).

Some of the strengths and abilities of adults with dyslexia have been collated by Reid & Kirk (2001). However, despite these strengths, with an absence of the necessary knowledge or support to be able to apply these skills to their working environment there is an increased chance that the focus on weaknesses of dyslexia and surrounding misconceptions will prevail. It is important to stress that not all dyslexic adults will necessarily have these strengths, which are highlighted below, but many are likely to have some or all of the strengths and may also have to apply such skills which they do possess in order to resolve a work problem. An outline of the characteristics is given below in Figure 2.1.

**Figure 2.1: Characteristic Strengths of Dyslexia (Reid and Kirk 2001)**



## Early Contributions into ‘Strengths’ Based Research

[Geschwind (1982](#_ENREF_44)) was one of the first dyslexia researchers to try to understand and explain the strengths of dyslexia:

*“... the very same anomalies on the left side of the brain that have led to the disability of dyslexia in certain literate societies also determine superiority in the same brains. We can, thus speak of a ‘pathology of superiority’ without fear of being contradictory*.” (p. 22-23).

Dyslexia is traditionally defined as a discrepancy between the individual’s performance in reading-related skills, and so by definition is associated with a ‘spiky’ profile of skills, with some strengths in certain areas countering the weaknesses in others. However, defining dyslexia as a collection of deficiencies, problems and difficulties, is an oversimplification which is in turn likely to damage and impact upon the dyslexic individual’s self-esteem; a point recognised by [Miles (1993](#_ENREF_74)), who suggests that dyslexics show ‘an unusual balance of skills’ (p.189) and [Vail (1990](#_ENREF_120)), who argues for the recognition of the ‘gifts and talents of the dyslexics’

[Vail (1990](#_ENREF_120)) summarised her lifetime of work with dyslexic individuals by suggesting a set of ten traits (which may be deemed strengths or ‘banes’, depending on the circumstances) as follows: a rapid grasp of concepts, an awareness of patterns, energy, curiosity, concentration (often to the exclusion of other obligations), exceptional memory, empathy, vulnerability, heightened perception and divergent thinking.

In reference to exceptional memory;

*“The discrepancy between facility with personal memory and difficulty with rote memorisation often confuses adults and the student himself.”* ([Vail, 1990](#_ENREF_120))

In reference to divergent thinking:

*“Divergent thinkers who enjoy open-ended questions can tolerate the ambiguity of seeing things from several points of view, and are happiest exploring questions which have no verifiable answers in the back of the book”* ([Vail, 1990](#_ENREF_120))

The number of specificities associated with dyslexia may make the use of measures such as the global IQ inappropriate (see Miles 1996), potentially leading to an underestimation of the potential of a dyslexic child or masking areas of strength which may be used in compensatory strategies ([Everatt, Weeks, & Brooks, 2008](#_ENREF_31)).

In the study of specific special populations of individuals, Howard Gardner makes particular reference to the nurturing of strengths and talents.

*“Education needs to transcend common knowledge, however. Important as it is for all students to know about the history and literature of their land, and about the major biological and physical principles that govern the world, it is at least as important for students to identify their strengths and to pursue areas in which they are comfortable and can expect to achieve a great deal”*

([Gardner, 2006](#_ENREF_40))

Gardner’s work in the development of ‘Multiple Intelligences’ has come early on to the attention of professionals who work with dyslexic individuals. In a significant number of cases of individuals with dyslexia, Gardner explains that such children show enhanced facility with visual or spatial activities. These strengths can be mobilised to help students excel in vocations and activities that exploit visuo-spatial capacities (Gardner 2006).

## Multiple Intelligences

The theory of multiple intelligences is a theory of intelligence that differentiates it into specific ‘modalities’ rather than seeing intelligence as dominated by a single general ability ([Gardner, 2006](#_ENREF_40)). Gardner challenges the conventional position of viewing intelligence as requests a fresh perspective to be taken into account where other human capacities can be considered as signs and indicators of intelligence. The eight abilities that Gardner held to meet these criteria was musical–rhythmic, visual–spatial, verbal–linguistic, logical–mathematical, bodily–kinesthetic, interpersonal, intrapersonal, and naturalistic. Although Gardner has created a distinction between the various intelligences he does however oppose the idea of labeling learners to a specific intelligence but rather that each individual possesses a unique combination of all the intelligences and that the use of these categories should be in order to ‘empower learners’ ([Gardner, 2006](#_ENREF_40)).

In particular, two of the core intelligence categories of interest are interpersonal and intrapersonal intelligence as there are similarities between some of the strengths of dyslexia indicated by researchers and there are possibilities of them becoming categorised according to these intelligences.

*“Interpersonal intelligence builds on a core capacity to notice distinctions among others, in particular, contrasts in their moods, temperaments, motivations, and intentions. In more advanced forms, this intelligence permits a skilled adult to read the intentions and desires of others, even when they have been hidden. This skill appears in a highly sophisticated form in religious or political leaders, salespersons, marketers, teachers, therapists, and parents. All indices in brain research suggest that the frontal loves play a prominent role in interpersonal knowledge “*

([Gardner, 2006](#_ENREF_40)).

*“Intrapersonal intelligence is knowledge of the internal aspects of a person, access to one’s own feeling life, one’s range of emotions, the capacity to make discriminations among these emotions and eventually to label them and to draw on them as a means of understanding and guiding one’s own behaviour. A person with good intrapersonal intelligence has a viable and effective model of him- or herself- one consistent with a description constructed by careful observers who know the person intimately. Since this intelligence is most private, evidence from language, music, or some other more expressive form of intelligence is required if the observer is to detect it at work”* ([Gardner, 2006](#_ENREF_40))

In light of the concept of Intrapersonal strengths, we can liken this idea of ‘self-knowledge’ to some of these innate cognitive strengths which has been described in some of the dyslexia research. In particular in reference to the ‘gifts’ and special ‘talents’ associated with dyslexia. Much of these have been likened to anecdotal insights. Therefore it would make sense that these strengths which may also be difficult to measure and generalise across whole dyslexic populations can be categorised in light of the viewpoint of having ‘self-knowledge’ into one’s own specific talents and abilities. However the concept of Interpersonal intelligence would be likened to some aspects of dyslexia, which are perhaps, more associated with the strengths associated with an individual’s interaction with another person (for example in relation to empathy and communication skills). These are examples of how the strengths and skills associated with dyslexia could be categorised.

## Cognitive/Talents Based Approach

### ‘The Gift of Dyslexia’

[R. D. Davis and Braun (1997](#_ENREF_23)) proposed eight ‘gifts’ associated with dyslexia: the ability to alter and create perceptions (the primary ability); environmental sensitivity; curiosity; pictorial thinking; intuition and insight; multidimensional thought and perception (using all the senses); the ability to experience thought as reality; and vivid imagination. They state that:

“*These eight basic abilities, if not suppressed, invalidate or destroyed by parents or the educational process, will result in two characteristics: higher-than-normal intelligence and extraordinary creative abilities. From these, the true gift of Dyslexia will emerge – the gift of mastery*”.

Davis describes dyslexia as “The mother of learning disabilities”. He explains why many other conditions have the same root cause as dyslexia, including Attention Deficit Disorder (ADD/ADHD).

### Creativity

The notion of dyslexia being a ‘Gift’ is highlighted in the previous section. [LaFrance (1997](#_ENREF_65)) highlights and describes that those students who qualify as both ‘gifted’ and dyslexic often have low self-esteem and poor motivation. The creativity concept, explored by LaFrance, is described in accompaniment with the idea of ‘giftedness’. For those students who are both gifted and dyslexic, LaFrance highlights that creativity is an important domain to foster as it will complement and strengthen the process of teaching. [Chakravarty (2009](#_ENREF_15)) hypothesises a link between artistic talent in particular and dyslexia, by claiming that *“a developmental delay in the dominant hemisphere most likely ‘disinhibits’ the non-dominant parietal lobe to unmask talents, artistic or otherwise, in certain individuals”*. The suggestion drawn from this hypothesis is that children with learning disorders can be encouraged to develop such hidden talents to their full capacity, rather than be subjected to an overemphasis of the need to correct their weaknesses.

According to [U. Wolff and Lundberg (2002](#_ENREF_135)), it is a widely held opinion that dyslexia is associated with remarkable artistic creativity, however very few objective studies have been reported that confirm the conjectures on the relationship between dyslexia and artistic creativity. In their study, in which they compared the signs of dyslexia among art academy students compared with non-art students, a significantly higher level of dyslexia was found in the art academy students. In explaining the hypothetical association between dyslexia and creativity, they highlight several possibilities. The first, introduced by [Geschwind and Galaburda (1985](#_ENREF_45)), speculates in reference to the specific neurological wiring resulting in both original information processing and specific dyslexic difficulties, that there has been evolutionary resistance of the dyslexic genes which in turn explain their extraordinary talents in other fields. The second possibility recognises that there might be a more general ‘co-morbidity’ where an unknown general factor has caused both dyslexia and creativity, without any direct causal connection between the two conditions. Thirdly, it is possible that the association between dyslexia and creativity might reflect an attempted compensation for early failure in skills which are highly valued in the school setting. Thus, dyslexic children tend to look for opportunities to succeed in other areas. Fourthly, the problems experienced in reading and writing, and the resulting frustration, may activate original and unconventional coping strategies and modes of thinking. Fifthly, the association might be an illusion based on the conspicuous discrepancy between reading achievement and artistic talent. Such talents might be equally distributed among non-dyslexics and dyslexics, but they are perhaps more visible among dyslexics. This thus influences the question as to whether dyslexia strengths are an inherent ability or are developed as a result of coping strategies in responding to relative weakness. [Everatt et al. (1999](#_ENREF_30)) compared a group of dyslexic and non-dyslexic adults and children, in studies concerning creativity, and found that signs of greater creativity and more innovative styles of thinking were displayed in tasks requiring novelty, as compared to the non-dyslexic adults. In this research, tasks performed by the subjects included: finding alternative uses for objects, producing drawn objects from basic shapes, completing a self-report inventory which assessed innovative styles of thinking, and the solving of problems which required some form of insightful thinking (Everatt et al. 1999).

[West (1999](#_ENREF_127)) highlights that right-hemisphere abilities may be related to problem-solving and creative thought, stating that:

*“Problem solving generally involves the recognition of a developing or ‘repeating pattern’’* (i.e. spatial ability) and *“problem solving may be considered nearly synonymous with some of the most important forms of creativity”* (p.22).

Such views predict that dyslexics’ creative talents will be associated with high scores when visuo-spatial skills are measured.

The common question has considered how, if at all, creativity is linked to dyslexia. The common notion sees that if someone is dyslexic then they have supreme and higher levels of creativity that become manifest. However a more appropriate approach to this may be: *Is creativity one of my relative strengths, and if so, what can I do to enhance this strength and craft my life to use it?*

### 3D Visualisation and Spatial Ability

In general, visuo-spatial ability refers broadly to the ability to represent and transform symbolic and/or non-linguistic information through space (Eide & Eide 2011). It involves reasoning with figures and shapes, which directly connects with reasoning in Architecture, engineering, the physical sciences and many of the creative arts, ([Gohm, Humphreys, & Yao, 1998](#_ENREF_47); [Humphreys, Lloyd, Lubinski, & Yao, 1993](#_ENREF_61)).

In a study by [Chan (2010](#_ENREF_16)) , visuo-spatial talents in Chinese students were assessed via the Impossible Figures Task (IFT), which was seen to be indicative of a student’s global visuo-spatial ability. The development of an instrument that assesses the visuo-spatial ability of students is, however, far from straightforward, especially when one considers the different types of visuo-spatial abilities discussed by different researchers. Some of the varying types of visual–spatial abilities include, for example, spatial perception, mental rotation, and spatial visualisation ([Linn & Petersen, 1985](#_ENREF_68)), as well as spatio-temporal ability and the generation and maintenance of spatial images. The classification is thus enlarged to include five distinct types. This presents a widening opportunity to also investigate 3D visualisation in more detail. In this connection, the work conducted on exploring the visuo-spatial strengths of children with or without learning disabilities is relevant ([Silverman & Baska, 1993](#_ENREF_110)) Despite the compelling individual cases presented in the above research, it has proved frustratingly difficult to demonstrate where the skills of dyslexic children or adults outperform their non-dyslexic peers [von Karolyi (2001](#_ENREF_123)); [von Karolyi, Winner, Gray, and Sherman (2003](#_ENREF_124)) found an advantage in speed (but not accuracy) for detecting impossible figures, which they attributed to an advantage in the holistic visual processing skills of dyslexics. In a number of studies, they evaluated the performance of individuals, both with and without dyslexia, on the task of identifying impossible figures. Impossible figures contain surface or edge violations that prevent them from existing as 3D structures. They found supporting evidence that individuals with dyslexia tended to recognise impossible figures more rapidly, but no less accurately than did those without dyslexia. Connecting these findings with their observations that individuals with dyslexia report visuo-spatial strengths alongside the reported elevated incidences of dyslexia among visual artists, [von Karolyi et al. (2003](#_ENREF_124)) suggested that a task testing the speed of recognition of impossible figures might serve as a measure for assessing visuo-spatial talents in dyslexics. They also conjectured that the recognition of impossible figures requires global visuo-spatial ability. Furthermore, [von Karolyi et al. (2003](#_ENREF_124)) write that such global visuo-spatial ability may be a distinct type of visuo-spatial ability, potentially underlying important real-world activities that involve mechanical skills, carpentry invention, surgery and visual artistry.

[West (1991](#_ENREF_126), [2009](#_ENREF_128)) undertook a series of detailed case studies with exceptionally gifted dyslexic adults and concluded that a special gift of dyslexia was three-dimensional visualisation or seeing ‘in the Mind’s Eye’. To be successful in school, West claims that students with a visuo-spatial approach to learning may need to have their strengths recognised and subsequently nurtured.

*" Visual and spatial modes of thought seem well suited to dealing with certain complex problems and are often closely associated with major creative achievements in the sciences as well as the arts. Visuo-spatial abilities can play a much more important role in major creative accomplishments; in many different fields, even when they are not commonly thought to be highly visual; than is commonly recognised."*

(West, 1991)

Increasing the level of difficulty, encouraging visualisation, teaching holistically, whilst using humor, colour and mnemonics, are methods that may be successfully used in these learners.

Other general strategies are highlighted by [Silverman (1989b](#_ENREF_109)):

*“Visuo-spatial learners need a Gestalt approach to learning. They do best when they deal with whole systems, abstract relationships, major concepts, inductive learning, and problem solving” (p.18)*

The task of identifying and assessing visuo-spatial talents in students is important as a first step towards supporting and enhancing their optimal talent development. Visuo-spatial ability has been increasingly appreciated as one of the important dimensions of cognitive ability in the school setting, in addition to the traditional emphasis on the verbal and quantitative aptitudes that stress reasoning with numbers and words ([Colangelo & Davis, 2003](#_ENREF_17); [G. Davis & Rimm, 2004](#_ENREF_22) ; [Winner, 1996](#_ENREF_131)).

[Attree, Turner, and Cowell (2009](#_ENREF_5)) undertook a small study assessing the visuo-spatial strengths of adolescents with dyslexia, using a virtual reality test. They found that visuo-spatial superiority was evident in men with dyslexia. The study consisted of forty two adolescents, half of whom were a control group, with assessments using the Recall of Designs and Pattern Construction sub-tests from the British Ability Scales (2nd edition BAS-11) together with a computer-generated virtual environment test (Attree, Turner, and Cowell 2009). They found that the adolescents with dyslexia tended to perform less well than their non-dyslexic peers, although difference not statistically significant.

However, for the computer generated virtual environment test (pseudo-real-life measure) significantly higher scores were achieved by the dyslexic group. These findings suggest that adolescents with dyslexia may exhibit superior visuo-spatial strengths on certain real-life tests of spatial ability. Overall, however, [Attree et al. (2009](#_ENREF_5)) argued that in terms of *relative* strengths in relation to spatial versus verbal abilities, strengths in the spatial areas for individuals with dyslexia exist, but evidence for the existence of *absolute* strengths compared to the general population is not consistent.

There is a results discrepancy where some suggest relative strengths in visuo-spatial areas, while others indicate spatial skills that are neither inferior nor superior to the rest of the population ([Everatt et al., 1999](#_ENREF_30); [LaFrance, 1997](#_ENREF_65)). Another explanation for the distribution of talent in this population is the default and channeling hypothesis ([Winner et al., 2001](#_ENREF_132)). Winner suggests that individuals with dyslexia who have enhanced spatial talents are more likely to choose spatial as opposed to verbal occupations, because choosing the latter avenue may not be an option open to them. This does not necessarily suggest any difference in spatial abilities between those with or without dyslexia ([Attree et al., 2009](#_ENREF_5)).

[Everatt et al. (1999](#_ENREF_30)) found an advantage for dyslexic adults in terms of creative tasks which involves requiring novelty or insight and more innovative styles of thinking, but no differences for school-aged dyslexic students. In a later study, [Everatt et al. (2008](#_ENREF_31)) found modest advantages for dyslexic children in terms of spatial memory and creativity. In general, therefore, the evidence has been patchy, dependent on the sample of dyslexic children and on the control participants involved.

The summary that *“Studies have reported superior, inferior, and average levels of visuo-spatial abilities associated with dyslexia”* outlines the current status on the visuo-spatial abilities of dyslexics at the present time ([von Karolyi et al., 2003](#_ENREF_124)). Many individuals with dyslexia tend to be best at holistic 3D thinking and problem solving, keeping the big-picture in mind, and are often thought to do well on tasks with spatial components. According to von Karolyi et al. (2003) for such individuals, using techniques that help them learn through their strengths can enable successful learning.

### M.I.N.D Strengths

Eide & Eide (2011) developed a strengths-led approach to people with dyslexia aimed at classifying different dyslexia strengths with profiles of individuals and also careers. Their work is not focused upon the problems with reading and spelling associated with dyslexics. As experts with a background in neuroscience and learning disabilities, they have worked with hundreds of individuals and their families. Out of this experience and research, they have identified a broad range of important cognitive features associated with dyslexia. Some of these cognitive features are learning or processing challenges, which include reading and spelling, rote math, working memory, or visual and auditory function. However, others are important strengths, abilities, and talents; gifts that they describe as the *Dyslexic Advantage*. [Eide and Eide (2011](#_ENREF_28)) proposed four primary talent patterns, which they have termed the MIND strengths. What they stress in particular is the relationship between someone who has been diagnosed with dyslexia and how, relatively, such an individual will match with any one of these MIND areas of strengths. They emphasise that very few will show *all* the MIND strengths; however there will certainly be different patterns of strengths and challenges across each person with dyslexia. These MIND strength patterns include: Material/Mechanical Reasoning - primarily a strength in 3D spatial processing and/or an intuitive understanding of how machines work; Interconnected Reasoning - a strength in detecting connections between ideas, events, objects, or perspectives, and an ability to detect the overarching gist or context or gestalt that connects them; Narrative Reasoning - the ability to construct detailed mental scenes using fragments of past personal experience; and Dynamic Reasoning - the ability to predict witnessed past or future events through the use of insight-based processing or mental simulation.

### Material Reasoning

This is the ability to reason about the physical characteristics of objects and the material universe (largely spatial reasoning ability).

*“I’m very good at forming 3D spatial images in my mind, and I can move them as I want to”*

*“I’m good at understanding how machines work, and how their parts fit and act together”*

*“I can mentally imagine the working parts of machines in m mind and I can ‘see’ how they operate.”*

Some of the M-Strength Occupations: *Engineer, Mechanic, Construction, Interior Designer etc.***([[1]](#footnote-1))**

### Interconnected Reasoning

Interconnected reasoning according to Eide & Eide (2011) is described as; the ability to spot connections or relationships between different objects, concepts, or points of view (similarity, causality or correlation); the ability to obtain diverse perspectives (or see things from multiple points of view, often using approaches and techniques borrowed from other disciplines); the ability to unite information into a single global or ‘big-picture’ perspective, and to determine large scale features like gist and context (Eide & Eide 2011).

*“I often see connections and relationships that other people miss”*

*“I often spot things, needs, or ideas that are missing or lacking, or that aren’t being recognised (so called ‘negative space thinking’)”*

Some of the I-Strength Occupations: *Computer Software Designer, Scientist, Chemist, inventor, Physicist, Musician, Actor, Chef.*

### Narrative Reasoning

This describes the ability to construct a connected series of mental scenes from past personal experience, to recall the past, understand the present, or create imaginary scenes. It includes different forms of factual memory, including Personal/Episodic memory. (Eide & Eide 2011)

*“I enjoy creating and telling stories”*

*“When I think of concepts I usually think of cases or examples or mental “scenes” rather than abstract verbal definitions.”*

*“When I think of facts about the world I think of mental “scenes” or experiences rather than abstract verbal definitions”*

Some N-Strength Occupations: *Poet, Songwriter, Novelist, Literature Journalism, Screenwriter, Psychology, Politician.*

### Dynamic Reasoning

Dynamic Reasoning involves recombining elements of past experience to predict or simulate future outcomes or witnessed past events. It also relies on the individual’s personal rather than abstract memory. It is especially valuable in situations that are changing or ambiguous, or where relevant variables are only partially known. Rather than following a rule-based logical or mathematical process, it builds upon cases or examples in an empirical “best fit” fashion (Eide & Eide 2011).

*“When I solve math problems I often just see the solutions but then have to struggle to figure out the steps to get to them.*

*“I have a good sense of “vision” for where I think things are heading.”*

*“I have a strong sense of intuition”*

Some of the D- Occupations: *Entrepreneur, Chief Executive, Finance Trader, Small Business Owner.*

### Empirical Work on Cognitive Strengths of Dyslexia

Interestingly, a recent study by [Bacon and Handley (2010](#_ENREF_7)) compared problem-solving strategies (rather than abilities) between dyslexic and non-dyslexic University students, using a syllogistic reasoning task that could be undertaken using either a verbal or a visuo-spatial strategy. The authors established that around 80% of the dyslexic students used the visuo-spatial strategy (compared with only 20% of the non-dyslexic students), and that spatial memory predicted performance levels for the dyslexic participants. They propose that dyslexic students are able to use spatial and semantic strengths to offset weaknesses in verbal memory.

## Interpersonal Strengths of Dyslexia

The different career categories mentioned earlier in this thesis relate to specific talents which are required if one is to become successful in that particular occupational area. One of the occupational skills, which have been previously mentioned in relation to dyslexia, is the ability to be ‘empathetic’, especially with those individuals around them. [Riddick (2003](#_ENREF_98)) identified that dyslexic teachers perceived that being dyslexic put them at an advantage because they were better able to empathise with and understand the problems children were experiencing in the classroom. This is partly attributed to the fact that they had experienced negative situations themselves when they were school children, and therefore wished to give the children whom they taught a better experience than they had previously experienced themselves. Another explanation could be that because they were used to being open about their own problems it allowed them to be able to cope with other people’s problems better (Riddick, 2003).

Other researchers such as [Taylor and Walter (2003](#_ENREF_118)) have also looked at specific career types, and the prevalence of dyslexic individuals within those careers. [Dale and Aiken (2007](#_ENREF_21)) discuss how having dyslexia might predispose those individuals towards choosing certain career paths, particularly those which are ‘person-oriented’, such as nursing. [Sanderson-Mann and McCandless (2006](#_ENREF_100)) found that 3% to 10% of nurses were dyslexic. [Taylor and Walter (2003](#_ENREF_118)) also identified that out of 16 nurses, 83% were dyslexic. Further research into the role of empathy across different work environments would be interesting in order to comparatively view the levels of Dyslexia within and amongst various groups.

In a study conducted by Gottfredson et al. (1984), several hundred boys who were diagnosed as dyslexic in adolescence were subsequently followed up later during adulthood. The occupations of these men, who were above average with regards to both their levels of intelligence and their socioeconomic backgrounds, were compared to those of both a control group as well as the general white, male population. The group of dyslexic men were found to have higher-level jobs than the average man, but they were also found to be much less likely than the controls to become professionals. They rarely entered jobs such as that of a physician, lawyer, or college teacher, which required higher degrees; instead mostly choosing to be managers or salesmen, which instead emphasised non-academic skills such as being persuasive and motivating. To conclude the study, Gottfredson et al. states that:

*“Our ability to assist any special group [in this case dyslexics], particularly those with handicaps that are not always remediable, would be improved by learning more about which cognitive, social and physical skills are most critical in different occupations” ((*[*Gottfredson, 1984*](#_ENREF_49)*) p.371)*

## Dyslexia and Entrepreneurship

Logan (2009) studied the prevalence of dyslexic individuals in relation to entrepreneurship. In comparing groups of entrepreneurs to corporate managers and the general US population Logan found that 35% of US entrepreneurs had difficulties in at least four areas commonly associated with dyslexia as well as 22% having difficulties in six or more areas. This would lead to a classification of being highly dyslexic. She found overall that only 1% of managers and only 15% of the general population had dyslexic tendencies. Franks and Frederick (2011) describe possibilities as to why there may be such a high prevalence of dyslexics in entrepreneurial roles, showing that there are some traits of both dyslexia and of entrepreneurship that may overlap. Traits such as being a good verbal communicator, being innovative and being able to think ‘conceptually’ are highlighted as common features of entrepreneurship. What is striking is that entrepreneurship is commonly linked with dyslexia, mainly due to the fact that there are many prominent individuals who have made it ‘big’ in business, notable names including Richard Branson, who have attributed their success to their flare for ‘innovation’ and the ‘big-picture approach’, a few of the many insights noted in past research in relation to the strengths of dyslexia.

## Strengths and Limitations of the Current Literature on Strengths Based Approaches to Dyslexia

The great advantage of having literature available which attempts to piece-together strengths of dyslexia is that it provides a starting point for Positive Dyslexia to build upon. It also provides us with a variety of perspectives of the strengths of these individuals who are viewing strengths in terms of cognitive and also creative strengths. Unfortunately the extant literature suffers from a lack of systematicity, a tendency to anecdote rather than evidence, and overall a shortage of *detailed evidence*. It is also difficult to determine whether the extraordinary skills found for some dyslexic adults are actually attributable to their dyslexia, or whether they are an additional strength, specific to the individual involved. Furthermore, a key issue is how representative such strengths might be for dyslexic adults. From the literature it could be argued that dyslexia is associated with a range of strengths as described. However it is also clear that this is only representative within a minority of dyslexic adults. For the majority, dyslexia can be associated with failure.

## Conclusion

At the individual level, there are persistent reports of dyslexic individuals with exceptional talents, and around 8-10 special talents have been proposed for dyslexia. On the other hand, there remains uncertainty as to how typical these talents are for dyslexia, or indeed whether there is a greater talent in dyslexia than in the normally-reading population. At the group level, empirical studies have failed to establish clear evidence of any distinctive skills. In terms of careers, there is some evidence that dyslexic adults tend to prefer careers involving creativity, entrepreneurship, visuo-spatial skills and imagination, but this evidence lacks both breadth and depth of coverage. The published data on career success for dyslexic adults has led to a set of ‘success criteria’, but these criteria appear to be likely to be important for career success for everybody. Most causal theories for dyslexia ignore strengths altogether, and few controlled studies of strengths and dyslexia have actually established significant strengths in worthwhile skills.

One of the difficulties for group studies is that dyslexia appears to be very heterogeneous ([Heim et al., 2008](#_ENREF_55); [O'Brien, Wolf, & Lovett, 2012](#_ENREF_89)) and also has substantial symptom overlaps with other learning disabilities ([Landerl & Moll, 2010](#_ENREF_66); [Nicolson & Fawcett, 2007](#_ENREF_81)) It is likely that this heterogeneity in terms of weaknesses is at least as great in terms of strengths. The consequence of heterogeneity is increased variance, and hence reduced statistical power for detecting significant differences for any given number of participants. It is therefore, in my view, not surprising that group studies have failed to establish significant differences in terms of strengths.

The studies presented in this thesis are designed to cast light on these issues. Rather than attempting to specify the strengths on the basis of literature searches, I adopted a qualitative methodology, interviewing individuals and analyzing the verbal records obtained so as to identify potential themes. Individual cases provide rich data but are limited in terms of the generality of the conclusions that can be drawn. I therefore undertook a series of such studies with a wide range of dyslexic adults, with the hope that comparison between the results would give some indication of the likely generality by attempting to capture similarities and differences between different individuals, different sectors and different levels of seniority.

From the plethora of literature supporting this study, there is evidence of a richness of theory and contributions supporting the notion of ‘Positive Dyslexia’. An opportunity has arisen to begin to explore the depths of *how* individuals, at a stage of investigating work practice, can practically understand the kinds of strengths which they possess, from a viewpoint of the workplace, and how these strengths can be investigated and applied in order to allow dyslexic individuals to lead more flourishing and fulfilling lives. It appears that different researchers have actually focused on different angles and therefore the talents researchers have focused on almost innate cognitive strengths. Whereas those focusing more on successful dyslexics have focused on the work strengths and factors associated with success. I might expect some of these to be more intrinsic and some to have been developed through experience. What appears to be a suitable classification is also in light of Gardner’s theory on Multiple Intelligences ([Gardner, 2006](#_ENREF_40)) (as raised earlier in chapter), namely categorisation into Interpersonal strengths, Intrapersonal/Cognitive Strengths as well and Work Strengths based on literature in light of Gerber’s contributions. This could be likened to the possibility of a ‘Three-Domain Taxonomy’ of strengths based on these three components. The study undertaken with dyslexic high achievers seeks to explore how we can investigate strengths and see how the results fit with the notion of a strengths based domain taxonomy.

# CHAPTER 3: Study 1 Interviews with Dyslexic High Achievers

## Introduction

Based on the literature review, approximately ten strengths based skills have been proposed as being associated with dyslexia and there is some evidence that dyslexic adults tend to prefer careers involving creativity, entrepreneurship, visuo-spatial skills and imagination. By contrast, the published data on career success for dyslexic adults has led to a set of ‘success criteria’ that are completely generic, independent of and not specific to dyslexia. Most causal theories for dyslexia ignore strengths altogether, while few controlled studies of strengths and dyslexia have actually established significant strengths in worthwhile skills. There is therefore a need for a more robust attempt at the investigation of strengths. The limitations to only focusing on a weakness approach to dyslexia is highlighted below.

### Limitations of the Weakness Approach

As highlighted in the previous chapter there have been outstanding contributions made towards the exploration of causal theories in dyslexia as well as the contributions towards the remediation of weaknesses. However it only represents one side of the coin. As well as the positive outcomes of such research, there are also potential issues, which are essentially problematic if not addressed. The dominant weakness approach for example does not allow much support for individuals in choosing suitable careers. Instead it merely recommends certain professions to avoid, i.e. ones that include little reading.

The focus on weaknesses in dyslexia also creates an imbalance in the research. As well as the weaknesses there also needs a balance of strengths too. Positive Psychology states that ‘curing the negatives does not produce the positives’ (Seligman 2000). Understanding one’s weaknesses does not necessarily contribute towards insight into ones’ strengths. The investigation of weaknesses has been continuing for decades, however individuals with dyslexia are still left not fully understanding their strengths and are not equipped with tools to be able to overcome their weaknesses apart from just the relative remediation of their weaknesses (Nicolson 2012).

The focus on weaknesses also leads to a limited intervention approach. Certain mechanisms for ‘coping’ can be employed, but are driven by extrinsic motivational factors such as ‘surviving in work’ as opposed to intrinsic and more long lasting motivational factors. It may also lead to the development of ‘mental abscesses’ towards certain literacy related activities, the consequences of which could lead to the perpetual exposure of stressful situations which have implications towards the development of possible mental illnesses and increased stressed levels.

The implications of this dominant ‘lack’ approach are therefore problematic not only for individuals with dyslexia, but for families and those who support them, whether in school or at work.

### Investigating Strengths

In my view, the difficulties in establishing clear evidence regarding exceptional talents in dyslexia and the difficulty in establishing distinctive ‘dyslexic career success factors’ reflect a (surprising) failure to recognise the diversity of skills that characterise dyslexia. In carrying out this investigation, it may well be that they have distinctive entrepreneurial skills, visuo-spatial skills, or may have a high level of talent for empathic problem solving. It is, however, unlikely that any one individual will possess *all* of these talents, and hence if one observes a random group of dyslexic people, such talents will tend to average out and thus lead to non-significant results. Equally, if one develops averages from across all jobs, rather than within specific jobs, one loses the characteristics that are intrinsic to such specific roles.

The literature review highlights the research the varied approaches and insights gained from the research in relation to the strengths of dyslexia. In the light of the varying perspectives on the strengths of dyslexia, the categorisation of dyslexia strengths into overarching groups seems plausible. One of the aims of this study, is therefore to see how the emerging themes could be grouped into the notion of a ‘3 Domain Taxonomy’. Potentially the themes which emerge from the interviews with high achievers could be grouped according to these domains. Based on the literature review, the potential domains can be grouped as work strengths, cognitive/talent strengths and interpersonal strengths as a suggested starting point. Further detail on each of these domains is outlined below.

*Cognitive/Talent Strengths*

Based on research into essentially ‘innate’ strengths associated with dyslexia, the Cognitive strengths take into account those perspectives from which we focus on the individual talents of the person. Such cognitive strengths include the big-picture approach, creativity and visuo-spatial ability. As highlighted by Gardner (2006) there is an element of self-knowledge associated with Cognitive/Intrapersonal intelligence. These are aspects which essentially one may not be able to ‘learn’ but just be innately talented in. Therefore a cognitive strengths category seems appropriate.

*Work Strengths/Success factors*

Most of the ‘applied’ strengths research with successful dyslexics has been conducted in relation to the ‘work’ dimension. Research from Gerber (1992, 2013), Raskind (1999), Leather (2011) and Fink (1998) highlight the success attributes of individuals who have Learning Disabilities and specifically dyslexia (see chapter 2). Highlighted amongst these are insights into an individual’s self-awareness, proactivity, perseverance, appropriate goals setting as well as associated coping strategies. As I will be interviewing adults with dyslexia who are in the workplace it would be interesting to see which strengths they possess that potentially could fit within this category.

*Interpersonal Social Strengths*

Specific research in relation to the social dimension of strengths of dyslexia is relatively thin. There have, however, been contributions in relation to observations between certain careers and high proportions of dyslexic individuals inclined towards them (See 3.5). These Interpersonal Social strengths therefore encompass, for example, ‘Empathy’ (Riddick 2003), inclinations towards ‘Person-oriented’ careers (Dale & Aiken 2007), as well as observations that dyslexic individuals show signs of ‘Perseverance’ and being ‘Motivational’ individuals (Gottredson 1984). By investigating the subjective experiences of high achieving dyslexic individuals in the workplace I hope to be able to draw out insights around which social strengths have been displayed by high achieving dyslexics and how their interpersonal social skills have been shaped through their experiences of being dyslexic. It could be these social skills that may provide insight into what makes dyslexic individuals desirable employees.

**Looking at Successful Adults**

The documented subjective experience of individuals with dyslexia is vast. There is much detailed research that explains how people with dyslexia really view their own disability and how they use it within varied settings. Because the spectrum of difficulties associated with someone with dyslexia, as well as the way they deal with it, is so varied, there is an absence of a single, clear approach. This has subsequently generated much interest in understanding not only those individuals who experience difficulties with dyslexia, but also hearing from those who have succeeded. By drawing upon examples from a range of professions and job fields, it is clear that observing traits and trends within such diverse fields would provide an indication into how strengths are implemented and used on a practical level.

In this study I wished to give each participant the opportunity to speak freely about issues which they considered to be important, but also to make sure that important areas were not omitted by chance. Consequently, I decided to hold ‘semi-structured interviews’, in which a specified set of questions were asked, but complete latitude was given to the interviewee to answer as they wished.

Clearly the design of the structure is crucial, in that the questions asked will affect the answers given. In order to gather data that was as rich as possible, I wished to cover all relevant aspects – strengths arising from experiences (at work or childhood), intrinsic cognitive strengths, social strengths, and work-related strengths. I felt that casting the net wide in this fashion, while allowing the interviewees to talk freely, was the best way of capturing the range of strengths that might be shown.

Following a literature review, together with discussions with experts in the field, the general structure (See appendix 1) was developed as the underlying structure. There were 15 questions, grouped into five categories - Having dyslexia; Experiences at work or at school; Succeeding with dyslexia; Aspects of dyslexia that could be considered strengths; Talents, work/success factors, and interpersonal skills.

## Aims and Objectives

1. To identify, for each individual, their specific perception of their strengths and to see how they have applied these strengths to the workplace.
2. To demonstrate that even if an individual is diagnosed with dyslexia (in some cases, at severe levels), it does not necessarily mean that they would not be able to find a sphere of usefulness nor have the same opportunities of working in a variety of different occupational fields.
3. To understand and see how self-reported strengths of dyslexia could be grouped according to a ‘three-domain’ taxonomy of work strengths, cognitive and interpersonal strengths in order to unite the range of dyslexia strengths described in the literature review.

## Methodology

### Research Strategy

*Exploratory Research Design*

As noted above, I adopted an Exploratory Sequential Research design to test and measure qualitative exploratory findings.

*“Methods implemented sequentially, starting with qualitative date collection and analysis in Phase 1 followed by quantitative data collection and analysis in Phase 2, which builds on Phase 1”* ([Creswell & Clark, 2011](#_ENREF_19)).

According to Creswell & Clark (2011), in contrast to the explanatory design, exploratory design begins with and prioritizes the collection and analysis of qualitative data in the first phase. Building from the exploratory results, the researcher conducts a second, quantitative phase to test or generalize the initial findings. The intermediate phase between the qualitative and quantitative techniques can also be the development of an instrument especially when the variables informing the second phase are not yet known.

Philosophical assumptions behind the exploratory design.

An Exploratory Sequential Design has two distinct phases. The first is to test or measure qualitative exploratory findings. The second is following it with quantitative data collection and analysis which builds on Phase one. Since the exploratory design begins qualitatively, the research problem and purpose has greater priority within the qualitative part of the study. In this case with the conducting of interviews.

An important consideration of any piece of research is the epistemological and ontological position of the researcher. This approach adopts the position that a middle way can exist between the rigidity of positivism and the relativity of interpretivism. The tension arising from these two extremes has characterised the historical development of the social sciences, often resulting in a further fragmentation of knowledge and understanding.

Positivism claims that the social world is an external, objective reality that can be measured. Similar to natural science, this position believes that researchers can quantify and manipulate external features of the world in order to observe cause and effect. The main aim of positivism is to identify invariable and universal laws of the world and to subsequently adapt our behaviour to these laws ([Tolman, 1992](#_ENREF_119)). Although a helpful perspective for testing ideas and beliefs, the notion that variables provide us with a direct understanding of the world has come to be questioned by an increasing number of researchers ([Tolman, 1992](#_ENREF_119)). With the emerging belief that understanding is primarily formed through focus on the meaning individuals ascribe to their experiences, a greater maturity now exists within the various methodological approaches adopted by social scientists.

Phenomenology: One such approach is that of phenomenology, in which 'experience' is considered to be more complex than a classical interpretation of positivism. Instead of labeling everything as quantifiable and external to human interaction, phenomenology sees experience as relational to other phenomenon. As such, universal objectivity is not the aim of psychological research, but rather inter-subjectivity is a helpful mechanism for understanding how humans perceive themselves in relation to the world. In this light, the aim of this research is to understand how the strengths of dyslexia are subjectively experienced in order to lay a foundation for identifying the psychological attributes associated with the strengths of dyslexia.

In order to avoid falling into any of these extremes in this research, the position that I intend to take is to work from *Constructivist* principles during the first phase of the study to value the multiple perspectives and to foster deeper understanding. Upon transition into the quantitative phase, the underlying assumptions may shift to those of *Post-positivism* in order to guide the need for identifying and measuring variables.

For the first part of the research I therefore wanted to conduct some qualitative interviews. As argued by [Blaikie (2000](#_ENREF_10)), the choice of research strategy can be influenced by nature of the particular research project and the kind of research questions involved.

Furthermore, selected research strategies will reflect the researcher’s personal philosophical position concerning the nature of social reality and how insight into phenomenon can be achieved. This research seeks to determine the extent to which adults with dyslexia are able to work according to their strengths in the workplace, investigating how, by working to these strengths, they are able to make more informed career choices or, if already in a line of work, how to effectively craft their daily work tasks according to their strengths. The mode of enquiry may be described as qualitative, i.e. principally concerned with meanings and processes that are not measured in terms of quantity, amount, intensity or frequency (as emphasised in quantitative research). Qualitative research emphasises the socially constructed nature of reality, being more closely linked to the perspective of the researcher because of the intimate relationship between the researcher and the phenomenon under investigation.

Although both qualitative and quantitative researchers think they have made discoveries which are worthwhile to the rest of society, quantitative researchers seldom capture the perspective of social actors as they have to rely on more remote, inferential, empirical evidence ([Denzin & Lincoln, 2011](#_ENREF_27)).

*Defining* qualitative research, however, is more difficult:

*“The open-ended nature of the qualitative research project leads to a perpetual resistance against attempts to impose a single, umbrella-like paradigm over the entire project.”*

([Denzin & Lincoln, 2002](#_ENREF_26))

The same authors view qualitative research as an interconnected process involving three key activities: ontology, epistemology and methodology ([Denzin & Lincoln, 2002](#_ENREF_26)).

Therefore, in qualitative research, the researcher forms a part of the research process itself, and the methodology necessarily requires a detailed examination of the method in which that particular research was conducted byparticular researcher in question.

### Choice of Qualitative Approach

The nature of the research questions involved and the essence of the subject matter under investigation must both be taken into account when choosing a research strategy. The research questions for this study are essentially exploratory in nature: as a qualitative research topic, the investigation of the strengths of dyslexia and their application towards finding suitable and fulfilling careers has received little attention to date. Much of the research to date has investigated strengths from the perspective of *talent*, considering visuo-spatial abilities, lateral thinking and problem solving abilities of individuals with dyslexia, without much focus on the combination of work strengths and character strengths. Therefore, by conducting a qualitative investigation on the career development and success of individuals with dyslexia and how they work to their strengths, the current study attempts to fill the gap in the growing body of discourse on career development and career success.

In order to better understand the subjective experience of someone with dyslexia, I decided to conduct a series of semi-structured interviews in order to properly explore peoples work professions and gain an overview on how they believed that their strengths could be utilised within training and work environments.

For an exploratory study of this kind, it is generally accepted that qualitative methods offer the most appropriate means of answering research questions. [Cassell and Symon (2004](#_ENREF_13)) agree that qualitative methods are more appropriate for exploratory studies, given that they are more concerned with emergent themes and idiographic descriptions. In conducting research on the lives of a small number of people, the qualitative approach was considered most viable for this study, as it is more likely to produce data of a deeper and richer quality. It also allows the respondents to be directly involved in the study, preserving their perspectives and expressions, which, although filtered through the researcher’s lens of time and experience, can be used to make their experiences and achievements accessible to others. As [Silverman and Baska (1993](#_ENREF_110)) point out, the aim of qualitative research is to gather an ‘authentic understanding of people’s experiences’, and it is believed that ‘open ended questions’ are the most effective route to this end. Similarly, research investigating the meanings and beliefs of individuals can be carried out best with recourse to qualitative methods, such as semi-structured interviewing, rather than quantitative methods, such as surveys.

Furthermore, use of qualitative methods endorses the significance of those who feel marginalised as dyslexics, i.e. those individuals who feel as though they have a problem by virtue of having dyslexia. It enables the researcher to listen to the variety of different experiences and comments of the research subjects. It could be suggested that the widely shared experiences of a particular social group serve to contribute to the collective knowledge and discourse of Learning Disabilities. A further advantage obtained from adopting this approach is that it offers the researcher the opportunity to illustrate the different conceptions individuals have of their strengths, success and dyslexia.

Using qualitative methods therefore, seems to offer the best means of producing data deep and rich enough in quality to shed light on the little understood subject of the career strengths of dyslexia in the workplace. It will require a semi-structured interview schedule, encouraging generated responses about particular subjects which the researcher considers to be important.

The role of interviews does not merely concern obtaining answers, but learning *which* questions to ask and *how* to ask them. The qualitative technique of interviewing requires the researcher to have an interest in and respect for the target respondents as individuals.

### Interpretative Phenomenological Analysis

Smith (1996) introduced a new qualitative methodology, IPA, belonging to the hermeneutic school of phenomenology as a way of attempting to resolve the, then, current debate between social cognition and discourse analysis paradigms.

*“It may prove useful to look at an interpretative phenomenological approach as being able to mediate between the opposed positions of social cognition and discourse analysis.” (p 264)*

The aim of interpretative phenomenological analysis (IPA) is to explore in detail how participants make sense of their personal and social world. The approach is phenomenological and involves a detailed examination of the participants lived experiences. It thereby attempts to explore personal experiences and is concerned with the individual’s personal perception or account of a particular object or event. IPA, as described by [Smith and Osborn (2008](#_ENREF_113)), emphasises that the research exercise is a dynamic one with an active role for the researcher in that process.

Interviews remain the most common method of data-gathering within qualitative applied Psychology ([Cassell & Symon, 2004](#_ENREF_13)). Phenomenology is a major philosophical tradition, which has had a substantial impact on the social sciences and especially upon the development of qualitative research methods. Phenomenological interviews are often quite lengthy and it is common for data collection and analysis activities to substantially overlap.

The process of constructing and using qualitative research interviews can be split into four steps:

* Defining the research question
* Creating the interview guide
* Recruiting participants
* Carrying out the interviews

([Smith, Flowers, & Larkin, 2009](#_ENREF_112))

Engagement is facilitated by a series of steps which allows the researcher to identify themes and integrate them into meaningful clusters, first within and then across the cases/interviews undertaken. With regards to the number of interviews to be undertaken for a first study, as described by [Smith et al. (2009](#_ENREF_112)):

*“Our current thinking is that for students doing IPA for the first time, three is an extremely useful number for the sample. This allows sufficient in-depth engagement with each individual case but also allows a detailed examination of similarity and difference, convergence and divergence.”*

([Smith et al., 2009](#_ENREF_112))

IPA is a complex interactive process, because accessing participant’s world of understanding is made more difficult by virtue of the researcher’s own personal understandings and biases. At the same time, it is acknowledged that the individual participant’s *abilities* to express their thoughts and experiences will affect interpretation on top of which are the researcher’s analytical and reflective abilities.

### Limitations of IPA

[Willig (2008](#_ENREF_130)) identified five ‘limitations’ of IPA:

1. Merely talking about an experience may not actually be describing the said experience;
2. The description of an experience is dependent upon the availability of language for a participant;
3. IPA may result in excluding participants who do not have appropriate language skills and thus their points may be dismissed;
4. An exclusive focus on the appearances- without causal context- not considered part of IPA *‘limits our understanding of phenomena’;*
5. IPA is concerned with “cognition”. Smith (1996) and Willig argue that this implies a Cartesian worldview, which is incompatible with some aspects of phenomenological thought.

I have therefore designed the study to avoid these problems and have addressed these limitations proposed by Willig in the following way:

1. The first limitation was addressed by the inclusion of appropriate interview schedule questions, ensuring that they included appropriate prompts to keep descriptions of experiences as clear as possible.
2. The second and third limitations are reasonable points and the majority of the individuals who were interviewed had good language availability and therefore were able to eloquently describe their experiences.
3. In the fifth limitation, Willig refers to the concern with cognition. I believe that it is very important not to exclude this approach and I will be specifically looking at cognition within my study. It is a rather narrow and limiting perspective to exclude it when considering the behaviours of individuals.

IPA was chosen fundamentally because it provided a set ‘framework’ and imposed nothing else on the data analysis process. It was also selected as it had relatively straightforward explanations of carrying out the analysis, which allowed for a systematic interaction with the interview transcript. It allowed for flexibility in the types of research questions that I wanted to address in this study, as well as allowing for various levels of interpretation that I found to be very interesting.

* It is highly accessible;
* The explanations of carrying out the analysis use easily comprehendible language with straight forward guidelines;
* It is flexible and lends itself well to the types of research questions in this study;
* It allows for various levels of interpretation;
* It does not require a theoretical pretext.

Qualitative research has limitations, of course. In conducting the qualitative interviews for example, the themes generated are inevitably individual, therefore further work needs to be done in order to see how representative findings are across larger population groups. The analytical process is also time consuming, and it is not possible to be able to be sure that important themes have not been overlooked. Furthermore, each researcher's interpretations is colored by his or her own knowledge. Finally, of its open-ended nature of the interview, the participants have more control over the content of data collected and therefore may not actually bring out some key issues (Cassell, 2004).

## Subject of Reflexivity

Arnold (2010) notes that reflexivity is an important concept in phenomenological research and that researchers often go to great lengths to reflect upon their own point of view and how it has influenced the way they tackled the research question and interpreted research findings. This will be highly important when carrying out a mixed methods approach in this research. It will require me to be reflective in order that I do not view the data as some objective reality that exists independent of the view of the researcher or the views of the research participants. Therefore maintaining it Phenomenological in nature.

Upon selection of IPA as a chosen methodology, I have outlined, in the rest of the chapter, further details on the steps taken from the interview to final themes. A flow chart (Section 3.3) also provides an outline of the steps taken in this data analysis. In general the procedure for IPA is as follows:

* Constructing a Research Question
* The Participants
* Constructing the semi-structured interview schedule
* Interviewing
* Transcription
* Analysis
* Step 1: Initial annotation of interesting and significant comments
* Step 2: Second annotation- higher levels of abstraction and use of more psychological terminology
* Step 3: Generating a table of initial themes
* Step 4: Analytical and theoretical ordering of themes
* Step 5: Generating a visual table of super ordinate themes
* Write-up

### Ethics

Ethical approval was obtained from the Institute of Work Psychology Ethics Committee. All participants signed consent forms and gave a recorded confirmation before the start of the interview. They were informed of the right to withdraw at any point during their participation in the study. The participants names were coded for confidentiality purposes.

### Participants

I wished to avoid the danger of selecting only ‘dyslexia friendly’ occupations such as architecture, academia, the media, and entrepreneurial roles, where unconventional skills can sometimes flourish, so as to engage with the strengths of dyslexic adults in relatively conventional occupations. Participants were selected to cover a range of professional jobs, with the criterion that they were successful in terms of: longevity, promotion, and professional qualifications. The selection of research participants followed a variety of approaches. At the outset, the specification was to draw participants from a variety of different occupational backgrounds. The other factors taken into consideration included that individuals would have to have been working in that particular profession for a certain amount of time and would have to have received a formal dyslexia assessment by a psychologist. Each and every one of the participants were either contacts of my Supervisor or individuals who were recommended to me to come forward for interview.

Participant 1 was a retired senior sales consultant for a multinational heating organisation, participant 2 was a software consultant for the National Health Service (NHS), participant 3 was a screen-writer, author and teacher, participant 4 was a criminal lawyer, participant 5 was a senior registrar in the NHS and participants 6, 7 and 8 were an architect, a journalist and a researcher respectively.

In the case of the doctor, for example, I did not know any doctors with dyslexia and so had to search independently for the participant through other contacts (hence the recommendation). The Author and the NHS Software Analyst were both personal contacts. Details of each participant are described below.

#### Company Sales Director

As a successful salesman for an American multi-organisational company, participant (A) did not find out about his dyslexia until relatively later on in his career when his own son was diagnosed as dyslexic as a young child.

#### NHS Software Analyst

Participant (B) is a software consultant working for the NHS. Working directly with doctors and nurses, his job entails finding out how current systems work and designing models based on in house software, which he then delivers over a period of two years (working alongside a large team). He was identified as having dyslexia during his last year at university, just prior to undertaking his final exams and a final year dissertation.

#### Author

As a screen-writer, author and teacher, participant (C) felt compelled to explore his creativity, particularly having previously experienced many non-creative jobs, and responded to this desire by becoming an author, subsequently publishing five novels. He was identified as dyslexic at the age of five years old. Describing himself as having *specific creative compulsions*, he has stated that his dyslexia endowed him with specific, creative strengths.

#### Lawyer

As a criminal lawyer working for a law firm in central London, participant (D) was identified as dyslexic from a young age. After originally commencing an art degree after finishing school, she went on to change her subject choice to history and, following this, undertook a postgraduate conversion course to law. This came after participant (D) underwent a period of work experience, traveling, and development of her interests through philanthropic means, ultimately leading to her decision to study law. She hopes to become more specialised in the area of human rights law.

#### Senior Registrar

Participant (E), having spent 2 years away from his consultancy position within general surgery, became a senior registrar. Diagnosed at the age of eight years old with dyslexia by an educational psychologist, participant (E) felt particularly strongly that his dyslexia no longer affected nor held him back in his day to day life and work, however he did acknowledge that he struggled throughout his time at school as a result of his dyslexia.

#### Architect

Participant (F) is a graduate from the University of Sheffield, winning various prizes in the field of architecture. Having since been recruited for a top Manchester architecture firm, he hopes to build on his success and take on more and more architectural projects, focusing particularly on the educational aspects of Architecture. Originally starting out his studies in Engineering, he changed his field to architecture upon greater consideration of his own skills and abilities.

#### Journalist

Participant (G) is a Pulitzer Prize Winner awarded for his writings on stem cell research, based in Boston, Massachusetts. Despite his dyslexia, he had a keen flare for freelance writing in college, while undertaking a science degree. He applied his knowledge from his degree, in combination with his passion for research by writing about one of the most controversial and topical scientific phenomena.

#### Researcher and Entrepreneur

As a student with an active interest in entrepreneurship, participant (H), after years creating computer software, commenced a PhD developing visual software for the dentistry field based on his own practical experience.

The second part of the interviews I carried out for this study were conducted with experts in the field of dyslexia research and practice. The purpose of this was to gain an insight into what the perceptions are from the perspective of strengths from individuals who have been working in this field for a extensive period of time and are responsible for much of the research, policy and practice that has gone into supporting individuals with dyslexia as well as other Learning Difficulties.

### Interview Schedule

IPA researchers wish to analyse in detail how participants perceive and make sense of the everyday phenomena that affects them in their lives. This type of research therefore requires a flexible instrument for data collection. This IPA study has been conducted using a semi-structured interview process. Utilising this type of interview process enabled me to engage with the participant in a dialogue whereby initial questions would be modified in the light of the participants’ initial responses and, this flexibility hence enabled me to probe into any interesting and important areas which subsequently arose. Through the use of a semi-structured interview schedule, as rapport was facilitated with the participant as well as allowing for greater flexibility of coverage.

The questions developed for the semi-structured schedule were ordered and compiled into six main sections (See Appendix for detailed interview schedule). The main sections were chosen in order to reflect the various dimensions I wished to explore in relation to the experience of having dyslexia.

The first section concerned the experiences of individuals with dyslexia, beginning with an exploration of their subjective experiences of their childhood and teenage school years. Participants were asked to reflect on the school system and the ways in which they managed to move past their difficulties, sometimes positively or even negatively. The questions asked also concerned the participants’ self-perception, both before and after diagnosis. These questions were asked as I wanted to start the interview with some background knowledge of people’s experiences with dyslexia in order to build a picture of what experiences of having dyslexia had been like as well as their experience of associated difficulties.

The second section concerned the participants’ experiences of work and/or school; involving an exploration of the areas of work they had experienced as adults and how and if they felt that their skills were suitably matched to their work. I added this to the second section of the interview schedule as I wanted to begin by making connections between experiences from school and the workplace and understanding on what basis choices of work had been made. Participants were also questioned on the choice of their career paths, to engage an understanding of how such jobs and career choices had been made and to also help further understand the type of work characteristics which they were particularly drawn to. This line of questioning also incorporated an exploration of the type of working conditions which participants tended to find most beneficial.

The third section focused on the theme of success with dyslexia. I added this section as I wanted to understand the conceptions of success of these individuals in relation to the careers they had chosen. Apart from the conceptions of success I also wanted to understand what it was that they felt gave them success and what they felt attributed towards their success. This included gaining insight into preferred working and learning styles, if any. There was a focus on encouraging the participant to think about the unique and special ways in which they learned or responded to particular difficulties, sometimes drawing upon specific examples ways in which they responded to certain situations. Questions also explored the reality of the different ways in which people think, as well as questions on problem solving. This section ended with an exploration of strengths and with questions, that aimed to draw out experiences of developing their strengths.

In the fourth section, I wanted to begin to draw out more information in relation to the self-reported strengths of the individuals, and hence included questions which aimed to draw out experiences in which they were required to demonstrate strengths and abilities particularly within the workplace. I focused upon asking the participants about perceived strengths. Certain questions within this section drew upon the strengths of dyslexia which have been reported from across various dyslexia experts (see chapter 3) and so, based on the literature review, I put together questions which aimed to engage the individuals in talking specifically about them. For example, it included questions relating to the big-picture approach and visual spatial abilities.

The fifth section explored the concept of resilience. This was explored as I felt that, because dyslexia is associated with particular difficulties, participants may hence have developed certain behavioural characteristics that would strengthen their ability to overcome these difficulties. Participants were asked to provide examples of how difficulties were overcome and how they were able to move past challenging situations.

The final section of the interview schedule explored the individual characters of the participants. I allowed for this section to be freer for the individual to explore what they felt their skills and abilities were and to be able to draw out their interests. Participants were able to share what they felt they were good at and what brought them joy in their day-to-day lives. I felt this was a very key aspect of the interview schedule as it gave the participants ownership over their contribution within the interview and enabled me to ask some open questions, incase there were other essential themes that I did not manage to capture in some way within the earlier sections. It also allowed rapport to be developed with the participants and individual experiences relating to other aspects of their lives to offer insight into their successes and strengths.

During questioning, as the interviewer, I attempted to align my questioning as much as possible to the interview schedule in order to enhance reliability. I aimed to:

1. Ask short and specific questions;
2. Read the question exactly as stated on the schedule;
3. Ask questions in an order identical to that which was specified within the schedule.

### Interviewing

The semi-structured interviews lasted approximately one hour and a half each. Each interview managed to proceed without interruption and I was alone with each participant for the entirety of the interviews. Each interview was conducted in the preferred environment of the participant. As an example, one of the interviews was held in the private room of a public library, as the participant did not want his family to know that he was dyslexic. One of the interviews, with one of the high achieving participants, was conducted over Skype, while three other interviews with different experts were also conducted over Skype, due to the distance between the interviewer and participants.

The interviews did not necessarily all follow the same sequence as provided on the schedule, while not every single question was necessarily asked in the exact same way. Minimal probes were used, if and when at all possible. The only times probes would be used was if respondents began to speak of an interesting area and hence questions would be asked to extract further detail, such as: ‘*Can you tell me more about that?’* or ‘*How do you feel about that?’*

### Tape Recording and Transcription

All of the interviews were recorded using an mp3 recording device, supplied by my supervisor. In some cases, because the recording device was unreliable I also used the recording device on my iPhone in order to gain dual copies and to reduce the risk of losing the material. It was necessary to record everything being said, because if one attempts to write down *everything* the participant is saying during the interview, one will only capture the gist of the information provided, missing important nuances. Writing notes, rather than recording the interview, would also interfere with the interview, preventing it from running smoothly and hindering the establishment of a rapport with the participants.

All participants were made fully aware that they were being recorded and all stated, at the beginning of the interview, that they consented to and did not mind being recorded. It was also important that, as an interviewer, I was conscious that such a recording would exclude non-verbal behaviour and that the recording still requires a process of interpretation by the transcriber or any other listener.

For IPA, the level of transcription is generally at a semantic level. One needs to view all aspects of the language and words spoken, including false starts, significant pauses, laughs and other verbal features. This information was fully recorded in an accompanying notebook. Transcription of tapes takes a long time, depending on the clarity of the recording in question and ones typing proficiency. On average, 5-8 hours of time was required for every interview.

## Analysis with a Set Example

The interview transcripts were transcribed (verbatim) (See Appendix 7 for an example Interview Transcript). The first stage of analysis involved examining each of the transcripts to gain greater insight into what dyslexia meant to each of the participants. Smith et al. (2009) describe the role of the investigator as engaging in an interpretative relationship with the transcript.As the investigator, I attempted to capture and ultimately do justice to the intended meanings of the respondents, to learn more about their mental and social world. The transcripts, therefore, required sustained engagement with the text and a process of interpretation by myself as the researcher, as stated by [Smith and Osborn (2008](#_ENREF_113)).

**Figure 3.1: Flow Chart: Data Analysis**

Development of the interview schedule

Literature Review

Generation of the research questions

Preliminary data analysis: transcripts are all read a few times to familiarise

Ethical approval

**Stage 2**: Second annotation- higher level of abstraction – use of more psychological terminology

**Stage 5**: Generating a ‘visual table’ of super ordinate themes

Organisation of data

Making sense of connections between themes emerging across participants

**Stage 4**: Analytical and theoretical ordering of the themes

**Stage 1**: Initial annotation of interesting and significant comments

Detailed Conceptual Analysis

Generation of transcripts

Finding participants

Requesting permission to tape sessions

Analysing meaning of statements

**Stage 3**: Generating a table of initial themes

Memos & reflective notes

**Looking for Themes**

The final transcript, for each participant, compiled in IPA format, was read a number of times, the left hand margin being used to annotate what was interesting or significant about what each respondent had said. It was important, at the first stage of the analysis, to become as familiar as possible with the provided account. Some of the comments are attempts at summarising or paraphrasing information provided, some will be associations or connections that come to mind in light of the information, and others may be preliminary interpretations. The process was then continued for the entire first transcript of each participant.

The example in the next section (3.3.1) demonstrates the initial annotation of part of an interview transcript (stage 1), showing the attempts to explore the lived reality of this participant, in light of his first experiences at work in a new job.

### Stage 1- Initial Marginal Annotation of Significant Comments

**Table 3.1: IPA Stage 1- Initial Marginal Annotation of Significant Comments**

|  |  |
| --- | --- |
| Transcript | Stage 1: Marginal Annotations |
| For a time I was unable to function properly because I was trying to change, but now I have developed, I can now write beautifully, or not.  This is part of the smoke-screen that people with dyslexia use, to cover up the fact that they are shoddy and untidy and misspell in the written work dyslexics produce.  [Pause] At work I struggled, at first at this company called Honeywell, I started as an inside sales engineer, answering the phone and answering technical enquiries, and at first I was even nervous of answering the phone and I didn’t know who it was going to be and what questions there were going to have, I had to write letters, I had never written letters before.  So it was very difficult for me to do, but I did it then began to enjoy it, and later got an outside position which means I got a company car and travelled around and visited customers. That was also enjoyable. | *Challenge of transition, ‘unable to function’ trying to unlearn processes built up from childhood*  *Prospect of nerves in the workplace, unsure of ones ability, learning how to do everyday administrative tasks*  *Hiding his dyslexia*  *Struggling at work*  *Carrying out jobs that never have done before, natural feelings on inadequacy*  *Overthinking*  *Going out and being in sociable environment- no problems communicating with others. Confidence building once start playing to ones strengths and doing something that brought joy* |

After repeating and continuing with this process for the entire set of transcripts, I then returned to the beginning of the first transcript and used the other margin to document the emerging theme titles from the text. The initial notes were transformed into concise phrases that aimed to capture the essential quality of what was found in the text. In this stage of IPA, the themes then moved the response to a slightly higher level of abstraction and involved assignment of more psychological terminology. At the same time, they linked back to the content of what the participant actually said. Hence, the skill required, at this stage, is to find expressions which are high-level enough to allow theoretical connections within and across the cases, but which are still grounded in the particularity of the specific thing said.

### Stage 2- Higher Level of Abstraction

At this stage the entire transcript was treated as data, and hence no attempt was made to select particular passages for special attention nor to omit them. At the same time, not every statement necessarily generated particular themes. Some passages were richer than others with regards to the number of themes which were found and identified.

**Table 3.2: IPA Stage 2**

|  |  |  |
| --- | --- | --- |
| Transcript | Stage 1: Marginal Annotations | Stage 2: Higher level of abstraction |
| For a time I was unable to function properly because I was trying to change, but now I have developed, I can now write beautifully.  This is part of the smoke-screen that people with dyslexia use, to cover up the fact that they are shoddy and untidy and misspell in the written work dyslexics produce.  [Pause] At work I struggled, at first at this company called Honeywell, I started as an inside sales engineer, answering the phone and answering technical enquiries, and at first I was even nervous of answering the phone and I didn’t know who it was going to be and what questions there were going to have, I had to write letters, I had never written letters before.  So it was very difficult for me to do, but I did it then began to enjoy it, and later got an outside position which means I got a company car and travelled around and visited customers. That was also enjoyable. | *Challenge of transition, ‘unable to function’ trying to unlearn processes built up from childhood*  *Prospect of nerves in the workplace, unsure of ones ability, learning how to do everyday administrative tasks*  *Hiding his dyslexia*  *Struggling at work*  *Carrying out jobs that never have done before, natural feelings on inadequacy*  *Overthinking*  *Going out and being in sociable environment- no problems communicating with others.*  *Confidence building once start playing to ones strengths and doing something that brought joy* | **Coping strategies**  **Hiding his dyslexia**  **Avoidance of tasks**  **Struggling to cope**  **Enjoys being sociable with others** |

**Connecting the Themes**

### Stage 3- Initial Themes

The emergent themes found throughout the transcripts were then listed on a sheet of paper, and I subsequently began to look for connections between them. The order of the initial list is provided in the example below (table 3) in chronological order; it is based on the sequence with which they came up in the transcript.

**Table 3.3: IPA Stage 3**

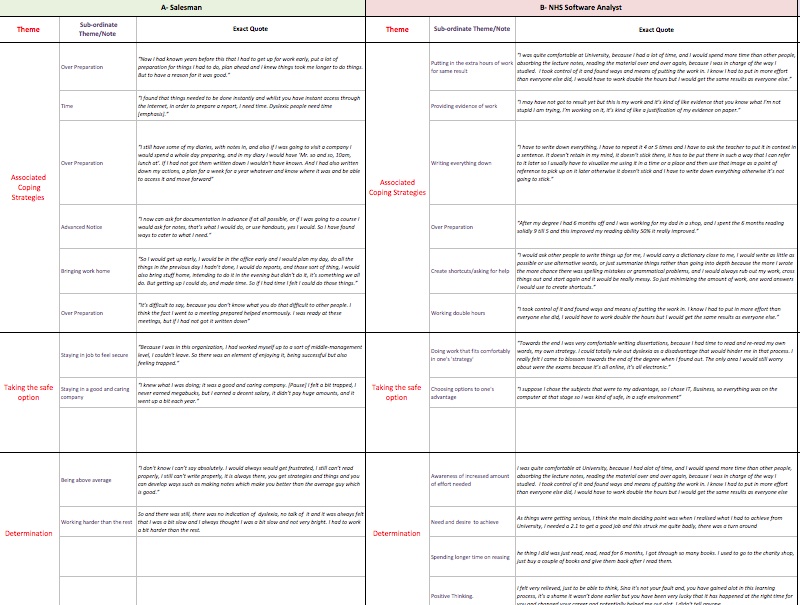
|  |  |
| --- | --- |
| **Initial Themes** | |
| Over Preparation  Time  Seeing solutions  Seeing where events led to  Experiencing failure  Experiencing failure  At one stage being unable to 'function'  Understanding  Seeing how things should work  Prize winning  Leadership  Feeling trapped. Not able to get directly into a job where you can help people  Succeeding and promotions  Struggling in early years, lack of qualifications  Feeling trapped in work at the beginning. In the wrong job | Trusting  Given responsibility of reassuring clients Over Preparation  Advanced Notice  Bringing work home  Over Preparation  Staying in job to feel secure  Staying in a good and caring company   Being above average  Working harder than the rest  New ways of working  Writing letters, reading maps  Feeling trapped in work at the beginning In the wrong job  Deadlines which were immediate  Report writing, being distracted, open plan offices  Unable to read quickly |

### Stage 4- Clustering the Theme

The next stage (stage 4) involved ordering the themes in a more analytical and theoretical way. As the researcher, I tried to make sense of the connections between emerging themes. As groups of themes emerged, the transcripts were checked to make sure the connections made were compatible with the primary source material; i.e. the actual words of the participant. I had to draw on interpretative and reflective resources to make sense of what the participants were saying, but, at the same time, constantly rechecked the way in which I had made sense of the data against what the person actually said. At this point, I created, for each transcript, a directory of the participant’s phrases that support related themes in Excel (Figure 3.2).

**Table 3.4: IPA Stage 4**

|  |  |  |
| --- | --- | --- |
| **Cluster of themes** | **Sub-ordinate concepts** | **Primary source material (transcript 1)**  ***(Example of a quotation extracted directly from the transcript)*** |
| Cluster 1 | Over Preparation  Time  Over Preparation  Advanced Notice  Bringing work home  Over Preparation | *“Now I had known years before this that I had to get up for work early, put a lot of preparation for things I had to do, plan ahead and I knew things took me longer to do things. But to have a reason for it was good.”* |
| Cluster 2 | Trying lots of different jobs  Wanting to find a job that matches with strengths  Not afraid to try new things | *“I say I have had as many careers as jobs, as I kept jumping around and doing different things, and again it was to jump to anything I could do, in the same way as I said before and possibly each job coming to I was waking out of step with everyone else. I could never keep on with anything for about 2 years, I kept changing one thing to another thing always feeling slightly out of step, again it is this habit of not asking for help which tends to hamper you.”* |
| Cluster 3 | Being above average  Working harder than the rest  Experiencing failure  At one stage being unable to ‘function’ | *“I don't know I can’t say absolutely. I would always would get frustrated, I still can’t read properly, I still can’t write properly, it is always there, you get strategies and things and you can develop ways such as making notes which make you better than the average guy which is good.”*  *“For a time I was unable to function properly because I was trying to change, but now I have developed, I can now write beautifully, or not. This is part of the smoke-screen that people with dyslexia use, to cover up the fact that they are shoddy and untidy and misspell in the written work dyslexics produce”* |
| Cluster 4 | New ways of working  Seeing solutions  Seeing where events led to | *“I didn’t know quite how he phrased it, but he could see that this was a quality of mine, and something which is a bit special isn’t it!? That really looking at what the events were leading up too, we could see the consequences of this action, and this is going to happen if we’re not careful”* |
| Cluster 5 | Dealing with problems that come up.  Creating coping strategies | *“There was also all the problem-solving and lateral thinking I would always find ways and tools, like finding new ways around things, but I have always managed to do this” (H)* |
| Cluster 6 | Understanding others  Being able to relate to how people are feeling  Coming from a place of difficulty gives insight into other peoples difficulty | *“My areas of very strong ability is my ability to detect people’s feelings and changes in people and the state of people’s feelings in a particular moment”* |
| Cluster 7 | Seeing how things should work  Ability to see things holistically | *“One of my managers, senior managers put in, that I had the ability not to foretell the future, but to see how events were going to pan out in the end. I had this ability to predict how things would work”* |
| Cluster 8 | Seeing objects in 3D  Being able to visualize objects  Seeing things differently to others | *“It is the change of scale too, you see that small model and you have to imagine yourself in that small space and imagine yourself walking around it”* |
| Cluster 9 | Socialising with people  Explaining things to others  Involving oneself with lots of people | *“I definitely feel now like I’m in a job that I should be doing. Its just it just appeals to a very different parts of me, I like talking to people who are doing interesting things, I like explaining things, I like being involved in public conversation somehow, I feel I am involved in the world and so all those things are very appealing to me.”* |
| Cluster 10 | Trusting others  Being given responsibilities  Leadership  Teamwork | *“...This is a customer who had totally rejected the company, my company one or two things had gone wrong, and inevitably they do go wrong, they said this is no good and we want to move, all these millions of pounds worth of business we are going to move it somewhere else, and I had to hang onto this business and it was important to the organisation, and I was given the job of doing that.”* |

**Figure 3.2: Screen shot of Excel document IPA Stage 5**

### Stage 5- Table of Themes with Super-Ordinate Themes Represented

In the next stage (stage 5), I produced a table of themes and grouped them in a coherent order. Thus, the above process will have identified particular theme clusters that capture the respondent’s concerns of the particular topic most strongly.

The clusters themselves were given a name and represent the superordinate theme (table 5).

**Table 3.5: Table of Themes with Super-Ordinate Themes Represented**

|  |  |
| --- | --- |
| **Cluster** | **Super-Ordinate Theme** |
| **1** | Proactivity |
| **2** | Experience and Job Sampling |
| **3** | Determination/ Resilience |
| **4** | Innovation given opportunities for creativity |
| **5** | Flexible Coping Strategy |
| **6** | Empathy for negotiation and /or support |
| **7** | Big-Picture Approach |
| **8** | Visuo-spatial skills |
| **9** | Communication |
| **10** | Teamwork |

## Validity and Reliability

Following the full analysis of the interview transcripts, two independent raters went through the transcripts, labelling each paragraph either in terms of the established themes or a theme of their own choosing. This permitted the assessment of inter-rater reliability and also an analysis of which themes were the least reliably related.

The data was independently coded by myself as well as two other reviewers who were asked to check the themes derived from the interview transcripts and to compare them to see if they agreed or disagreed with the themes which were extracted. If they disagreed they were also asked to share suggestions of alternative themes. Insights into carrying this process out was highlighted from [Armstrong, Gosling, Weinman, and Marteau (1997](#_ENREF_2)).

Qualitative methodologists are keen on stressing the transparency of their technique, for example, in carefully documenting all steps, presumably so that they can be ‘checked’ by another researcher.

Cohen’s kappa coefficient is a statistical measure of inter-rater agreement. This was used in order to test the reliability of the themes extracted from the interview transcript. According to Hallgren (2012):

*“The assessment of Inter-rater reliability (IRR) provides a way of quantifying the degree of agreement between two or more coders who make independent ratings about the features of a set of subjects”*

IRR measures the observed level of agreement between coders for a set of ratings and then corrects for the agreement that would be expected by ‘chance’ providing a standardized index of inter-rater reliability that can then be generalised across various studies. Possible values for kappa statistics range from −1 to 1, with 1 indicating perfect agreement, 0 indicating completely random agreement, and −1 indicating “perfect” disagreement ([Hallgren, 2012](#_ENREF_52)).

## Conclusion

This chapter describes the aims and objectives as well as the methodology chosen for this research. The purpose of this first study is to gain insight into the subjective experience of a dyslexic individual who has overcome their difficulties and to explore the potential of categorising strengths according to different strength domains. The chosen methodology was Interpretative Phenomenological Analysis. The methodology selected has enabled the research to lead to very interesting findings, the results of which are explained in the following Chapter. It includes novel findings in relation to the strengths and talents of individuals with dyslexia as well as potential for the categorising of strengths into domains. This will lead to clarity as to how strengths can be identified and strengthened for a person with dyslexia. I believe that this methodological choice ensured the obtainment of the richest data set possible.

# CHAPTER 4: Study 1 Results: Interviews with Dyslexic High Achievers

## Overview

Eight successful dyslexic adults working in a range of different careers were interviewed. The findings here both integrate and extend previous research conducted on this topic. As outlined in the previous chapter, the methodology allowed for the analysis and exploration of a very rich data set with insights of significant depth of insights. Overall, 10 super-ordinate themes were found across the interviews with dyslexic high-achievers.

**Table 4.1: The Participants**

|  |  |
| --- | --- |
| A | Company Sales director |
| B | NHS Software Analyst |
| C | Author |
| D | Lawyer |
| E | Senior Registrar |
| F | Architect |
| G | Journalist |
| H | Researcher/ Entrepreneur |

## Reflections on Interview Process

Participants were very keen to answer questions about their dyslexia, however they still struggled to specifically identify what their strengths were. The reason why it was potentially difficult to provide reasons for being unable to describe their strengths was perhaps because they were unable to see their own strengths in the midst of their potential weaknesses. Furthermore, because they perhaps have had little reinforcement of their strengths and abilities, there could also be an unawareness of both their strengths and abilities. An encouraging aspect, however, was the fact that participants were readily able to provide poignant reflections on their life experiences, which ensured a richer contribution to the overall data and hence the process of interpretation and extraction of themes.

## Detailed Description of Each of the Themes

Each of the themes, which were extracted from the interviews, are accompanied by an explanation and interpretation of each, as well as relevant quotations directly from the interview transcripts to support the insights.

### Theme 1: Determination and Resilience

From past experiences and difficulties, participants felt that they could apply their experiences in a positive way in order to become determined and focused individuals. The desire to achieve was balanced with a strong work ethic to work hard and not view barriers as obstacles to success.

Participants described that a major component of their determination stemmed from always having a sense of ‘being above average’. Striving to succeed henceforth means having a higher sense of determination.

*“I don't know, I can’t say absolutely. I would always get frustrated, I still can’t read properly, I still can’t write properly, it is always there, you get strategies and things and you can develop ways such as making notes which make you better than the average guy which is good.” (A)*

Another feature of the participants, attributed to a greater sense of determination, was their feeling that they needed to work harder than others. Self-perceptions of feeling ‘slow’ or being ‘not very bright’ were very much evident in descriptions from the participants.

*“So and there was still, there was no indication of dyslexia, no talk of it and it was always felt that I was a bit and not very bright. I had to work a bit harder than the rest.” (A)*

Such tasks still unavoidably highlighted their dyslexia, including job applications, the writing of reports and long term planning towards future jobs.

*“If I have applications to do I prefer to do them hand-written. When doing tasks I do things in the absolute opposite way, I like to tackle the things I struggle head on so I can tackle my weaknesses.” (D)*

*“As things were getting serious, I think the main deciding point was when I realised what I had to achieve from University. I needed a 2.1 to get a good job and this struck me quite badly, there was a turn around.” (B)*

The participants who had received a late diagnosis of their dyslexia described how the diagnosis itself provided a great source of motivation and relief, helping them to gain understanding of the reasoning behind their difficulties.

*“I felt very relieved, just to be able to think, ‘it's not your fault and, you have gained a lot in this learning process, it’s a shame it wasn’t done earlier but you have been very lucky that it has happened at the right time for you. This changed your career and potentially helped me out a lot’. I didn't tell anyone.” (B)*

*“They confirmed that yes I had strong signs of dyslexia and it was one of the most eye opening days of my life it really took a burden off me because I was cutting myself up for many many years, saying you know, what are you doing? You aren’t going to achieve anything, you are going to struggle throughout your whole life, so it was in the last years which was excellent timing because I had the extra time in the exams and I actually feel that if I had not got the extra support I wouldn’t have got the final outcome in my degree.” (B)*

Relating experiences back to earlier times in their lives, participants considered that the stressful experiences they had had during their school lives had made them more resilient and, when experiencing difficulties in their work environment, they now felt that they could quickly bounce back and respond constructively. By essentially ‘experiencing failure’, participants were acutely aware of what this feeling was like. Many described how the period of their early school years was when they felt the most anxious and uneasy, given constant examinations and tests and being given labels such as ‘late developers’.

*“I was just lost in the school environment, everyone else seemed to know where they were supposed to be and what the next lesson was, and I just had no idea. I failed my 11+ which then was a sentence to failure.” (A)*

*“I wasn’t good enough. But at the end of the three years, we took an exam and got a diploma if you passed or only just passed, or you could get a second class diploma or a first class diploma. I got a second class diploma which was equivalent to 5 GCE's which entitled me to go onto further education and miss out all of the preliminary years; I got to that threshold level. By then I was beginning to be known as a late developer.“ (A)*

The sense of difficulty felt by the participants was frequently followed by expressions of resilience, in which they would describe how a sense of failure is only a temporary phase and that such thoughts could be used as an opportunity for growth. The experiences of suffering, also described as a ‘chip on the shoulder’, resulted in a greater desire by the individual to prove that they were able and determined to achieve and succeed.

*“I also don’t get disappointed too long; it's very temporary, if I know I can grow from it.” (B)*

*“I think that the experience of suffering in childhood is something that pushes people towards creative expression, also I think it forms a motivating force to, it pushes you on. Its almost like a chip on your shoulder that you have to prove that you can do something” (C)*

### Theme 2: Flexible Coping Strategies

Many participants were able to identify instances where, in moment of challenging or difficult events they were able to flexibly cope and develop coping strategies to compensate. They considered that timely use of these coping strategies was central to their success. They felt that, in return, it prevented stress, increased levels of confidence and heightened work motivation, while also enabling them to identify future risks and problems.

In work environments involving a heavy flow information at different periods, the need for dyslexic individuals to write information down was important, especially as some moments involved suddenly taking in information and being quickly required to do something with it.

*“I have to write down everything, I have to repeat it 4 or 5 times and I have to ask the teacher to put it in context in a sentence. It doesn’t retain in my mind, it doesn’t stick there, it has to be put there in such a way that I can refer to it later so I usually have to visualise me using it in a time or a place and then use that image as a point of reference to pick up on it later otherwise it doesn’t stick and I have to write down everything otherwise it’s not going to stick.” (B)*

In many instances, there would be moments during work in which they would need to ask for help with certain tasks or create new ways of working to make following certain tasks easier and avoid getting into difficulty.

*“There was also all the problem-solving and lateral thinking I would always find ways and tools, like finding new ways around things, but I have always managed to do this.” (H)*

*“I would ask other people to write things up for me, I would carry a dictionary close to me, I would write as little as possible or use alternative words, or just summarise things rather than going into depth because the more I wrote the more chance there was spelling mistakes or grammatical problems, and I would always rub out my work, cross things out and start again and it would be really messy. So just minimising the amount of work, one word answers I would use to create shortcuts.” (B)*

Many of the participants mentioned how it would take a long time to take in new information and understand new concepts. In order to assist this process, they would often use different kinds of visual aids in order to help them understand something better.

*“All throughout year three of university I was using mind-maps. The more visual I can make it the better really and bullet points but when I was younger I would use it, and I would recommend it for anyone.” (F)*

*“Perhaps if I think about an example if I have to learn a new part of the law, I think its just making sure that I take a bit more time to get it in my head. Probably also like with structure, like sometimes in law you have diagrams showing flow charts, they are much better for me and its good if people use them.” (D)*

### Theme 3: Proactivity

Participants described how they would constantly try to think ahead in order to cope with future actualities. They described how in order to do this there was an element of preparation as well as proactively devoting time towards understanding something.

For those who were especially reliant on working in teams, one particular proactive method adopted by many of the participants was to ask for work related documentation in advance. This way, they could ensure that they would have adequate time to feel properly prepared and decrease the likelihood of having to read heavy material in a given situation. This was particularly interesting in the case of the lawyer, whose work often requires having documents to hand immediately and often involves suddenly being called to court to attend a trial.

*“If I have time to prepare I feel better about it. I understand its necessary with a short hearing, but with a trial you need time to prepare. The nature is on the spot, you have to take calls every hour, go to the police station. I think the more senior you get you will get more choice. That is what I struggle with, just being called suddenly. I really need time before a trial.” (D)*

Due to the heavy workload that accompanies working in particular work environments, there was often an evident need for some participants to take their work home so as not to be left behind. Due to the fact that these individuals required longer time to carry out some of their tasks, extra time was hence required to catch up on other work. Taking their work home with them thus ensured that they would be able to stay on top of their workload and not get behind.

*“So I would get up early, I would be in the office early and I would plan my day, do all the things in the previous day I hadn’t done, I would do reports, and those sorts of things, I would also bring stuff home, intending to do it in the evening but didn’t do it, it’s something we all do. But getting up I could do, and made time. So if I had time I felt I could do those things.” (A)*

A very common recurring theme throughout the interviews concerned the participants’ descriptions of their working environment and the fact that they felt the need to prepare extensively for a working day. Such common themes were mostly related to upcoming deadlines and writing reports. They felt that this was necessary, as many of these tasks required a longer time of them to complete, in comparison to their colleagues.

*“I found that things needed to be done instantly and whilst you have instant access through the Internet, in order to prepare a report, I need time. dyslexic people need time [emphasis].” (A)*

When the participants felt that they were generally more prepared, overall they tended to feel much happier with themselves. They had an acute awareness of the extra time they would need to take on tasks and the amount of extra time needed for checking their work.

*“For me it definitely more preparation, I over prepare. It is not 9 to 5.” (D)*

Another common sub-theme identified was the fact that they found themselves to be doing a sufficient amount of work upon returning home in the evening, after an official day’s work. Even if they felt themselves to be doing more work than was needed during work hours, they nevertheless felt more comfortable and at ease after they had undertaken this added work.

### Theme 5: Big-Picture Approach

Participants recalled experiences they had had in the workplace and within organisations, which demonstrated examples of cases in which they were able to see ‘the big-picture’ on tasks they were undertaking. By being able to see the end-goal of things, while approaching tasks holistically, they were able to maintain levels of motivation and vision for their teams and colleagues as well as themselves.

The salesman described how having an ability to see ‘the end in things’ was a great personal advantage. Being able to predict the closing of a deal, with the right assurances given to customers, allowed him to attain the highest numbers of sales deals and therefore made him very efficient at his work. By being able to offer meaningful advice to others made him a great asset to the company and enabled him to move ‘up the career level’, as his skills had become noticeable to his managers.

*“One of my managers, senior managers put in, that I had the ability not to foretell the future, but to see how events were going to pan out in the end. I had this ability to predict how things would work, and he valued the fact that I could advise him, that this is a difficult situation, we are doing this, and the results are going to be that. I didn’t know quite how he phrased it, but he could see that this was a quality of mine, and something, which is a bit special, isn’t it? That really looking at what the events were leading up too, we could see the consequences of this action, and this is going to happen if we’re not careful.” (A)*

The ability to view things holistically gave the NHS software advisor the ability to effectively teach his peers about technical issues in the software which being created. However this could at times be difficult when teaching others, as sometimes he would be effectively starting with very ‘big-picture’ ideas while leaving out some essential small detail. This unfortunately would not always work to his advantage as he realised that sometimes the difficulties were in the smaller detail that he had missed out.

*“I have noticed in the way I talk to my peers about the technical issues in the software, my brain jumps a couple of steps, so I wouldn’t give the background of how I got there, I would just say something and they would say, how did you get there? And they are asking how I got there and I have to say, Sorry I meant, this, this and this, but my brain just goes straight to 5 steps ahead. I feel like I think very fast but it just doesn’t make sense to anyone else” (B)*

In the years of being an editor, the journalist found ways of utilising a ‘big-picture’ approach to seeing the end finished piece for articles and items for publication.

*“Its very important in journalism and I notice that a lot of journalists also have problems with it and I discovered it that made me a very good editor and has also helped me with my writing, just being able to see the big-picture on it and the story and being able to just shuffle paragraphs around” (G)*

The concept of time in relation to the big-picture approach was something frequently commented on by the participants. For the author in particular, the need for big goal setting and for writing was necessary in order to have work completed on time. Setting long term goals came easier for the author, however, than setting short term goals, as his immediate ability to focus on small short term detail was not as strong. Allowing himself to be immersed in a particular moment in time enabled him to explore his personal creativity and deeply connect with the materials about which he was writing.

*“So I have like this very interesting relationship with time in comparison to most people and this means that the big goals are easy and also being immersed in the moment is easy and this is the next thing about writing, you have to be really immersed in the writing and lose yourself in the moment and I think I guess this is something which people have a great difficulty in merging the flow of time then we do naturally.” (C)*

*“The ability to set very long term goals, much bigger, much more long term that is usual, and they kind of push away from each other these two things. I am so polarised in terms of doing big long term stuff, 2/3 years of long term stuff, but I am disabled in terms of telling you what I will be doing tomorrow a 3pm” (C)*

### Theme 5: Innovation Given Opportunities for Creativity

Participants felt themselves to be generally creative people who were innovative when given opportunities for them to be so. When such opportunities are presented to them, they could excel and become creative leaders in their work environments.

When faced with a particular type of work-related situation, ‘coming up with new ways of working’ was very important for the participants, so that they could develop new strategies and adapt to deal with challenges. In some cases, the fact that the participants had to develop new and creative ways of working, methods of which had not necessarily been taught to them, sometimes worked to their advantage.

*“I would say 'would you mind if I just make a one or two notes', and next time we met I knew exactly what had gone on before and there wasn’t a problem, and in that way, I found I was better probably, than people who hadn't taken notes, and no one could remember everything and certainly not for a month and moved on with a further month.” (A)*

The researcher/entrepreneur felt, in particular, that being able to envision solutions to specific problems gave them a special advantage, and became an opportunity to be creative and apply themselves in various settings.

*“Again I felt I was very well suited to the work environments I have managed to get into. With programming, because it is essentially speaking in your own language logically I have always found I could come up with a solution in terms of JAVA which would not what you would expect it to be but would be quite good.” (H)*

The ability to problem-solve has frequently been mentioned as something which dyslexic adults have strength in (Logan 2009). With a combination of having a ‘big-picture approach’ on tasks while also being able to see the ‘end’ of things, this tends to result in a special problem-solving ability in specific tasks being undertaken.

*“At school there was also all the problem-solving and lateral thinking I would always find ways and tools, like finding new ways around things, but I have always managed to do this.” (H)*

Combined with creativity, the researcher/entrepreneur was able to go on from his original work as an entrepreneur into finding practical ways to apply it to his research. He was able to describe systems of working with relative ease describing it as an ability to see solutions to problems and coming up with ideas to rectify them.

*“I have always found myself to be very good in terms of creative problem solving, and part of the literature review for the PhD basically they have this high level idea and they were not expecting very much from me but how would I go about it, and basically I went back with a pen and paper on how the system could work there and then on the spot, which I think is one of the reasons I could think about it on the spot because it seemed straight forward to me.” (H)*

Being able to envision the finished product and an end result gave the architect a particular advantage, enabling him to be innovative in the way in which he created a piece of work. By being able to see the direction towards which events lead, the architect could imagine the finished piece of work and allow his ideas to come to fruition.

*“I love architecture because you can always walk around the finished design when it has come to finished product. It is the change of scale too, you see that small model and you have to imagine yourself in that small space and imagine yourself walking around it.” (F)*

It was noticeable that most of the participants viewed themselves as being creative people. For the architect, creatively developing ideas and designs was very important. In this example, the architect felt that his creativity was even more noticeable than even his drawing ability and that his creativity was something for which he was recognised for.

*“Because with architecture the ideas are bouncing around all over the place and that is the thing you have these rolls of choice and everyone is drawing away and everyone here are good at design and everyone has different ideas, there is never one really good idea there are lots of good ideas and I think I get more recognised for my creativity than I do for the quality of my drawing, I’m good at drawing, but its more that I have an idea and its how quickly you can pervade that idea better” (F)*

The author described how he felt compelled to explore his creativity (in some cases more than others) as it was directly related to his work, as a creative writer.

*“I think everyone is creative but I think some people are compelled to explore their creativity and I think that is the difference.” (C)*

### Theme 6: Visuo-spatial Skills

Enhanced visuo-spatial skills is an area of strengths which has frequently been mentioned in the literature on dyslexia abilities as part of an ongoing debate as to whether it actually does constitute a strength. In asking the participants about this I aimed to explore what their perceptions of it was and whether they had a particular enhanced skill or not. Visuo-spatial skill has been described in a number of ways, having also ben called 3D visualisation, spatial reasoning and visuo-spatial strength. Eide & Eide (2011) describe it as the ability to make connections between things.

There were different variations in the way each of the participants described their abilities in visualisation. Some participants made reference specifically to having a 3D spatial sense and others imagined themselves to be in a space or environment where they could picture systems or models and see them from multiple angles.

*“I have a really strongly developed 3D spatial sense, so that when I’m sat here I’m partially aware of what is happening on the other side of this wall.” (C)*

*“It is the change of scale too, you see that small model and you have to imagine yourself in that small space and imagine yourself walking around it.” (F).*

*“I went back with a pen and paper on how the system could work there and then on the spot they offered me the PhD. I could think about it on the spot because it seemed straight forward to me, I just saw it in my head.” (H)*

By knowing and having a good understanding of their ‘talents’, the participants felt that they were able to then find ways to succeed at their jobs, finding direct links between talent and practice. Examples of 3D visualisation as well as ‘big-picture’ modeling were included as some of the talents which engaged a positive work attitude.

*“I just got it straight away, everyone is sweating and struggling with it, but through the lesson I was going onto another problem and another problem and its fabulous. That is my first experience of them seeing the state that I was in and me being in a completely different state. Because it is 3 dimensional modeling, it’s mind-boggling. The geology teacher said I was the only pupil he ever had in his career who go it straight away because it matches my mode of thinking.” (C)*

### Theme 7: Teamwork

Most participants considered themselves able to work well in teams. Having previously experienced difficulties, they didn’t necessarily find it difficult to consult with others or to ask for help.

Working in a big team was described as ‘desirable’ by many of the participants. The software consultant, in particular, regarded the people oriented aspect of his job to be its main highlight.

*“I work with a very big team. I like my job, very people orientated, working with a diverse range of people, presenting to a lot of big audiences, training people who are very slow at using computers in hospitals so I have a lot of patience with them, been doing that now for 2 and a half years.” (B)*

The requirements associated with teamwork enabled the participants to describe the skills that they thought essential for working well in teams. A few such skills included the ability to understand other people’s point of view as well as using interpersonal skills and communication techniques (which helped them to understand other peoples’ difficulties).

*“You are always working in a team and you therefore need good interpersonal skills if you are going to succeed. You need to be able to go up to them and be able to ask them questions; you meet a huge amount of people.” (E)*

*“The job I’m doing now, I’m a software consultant with the NHS, so that involves working directly with doctors and nurses, finding out how the current systems work and then designing something with the in house software and delivering that over a period of two years. Communicating with them well is very important.” (B*

As far as an interpersonal strength, it is uncertain whether these high achievers specifically attribute ‘Teamwork’ as a result of their dyslexia or just as a strength they have developed outside of their difficulties with dyslexia. It is likely that this as a strength could be reported by any category of person. However what we could suggest here from the data is that the individuals do consider teamwork to be important and even without it being specific to dyslexia, an important strength to be developed within the workplace in order for them to be effective in their work.

### Theme 8: Empathy for Negotiation and/or Support

Participants described themselves as having a strong ability to recall emotions and to sense the emotions of others. By utilising this ability within the workplace, they were able to quickly to move into senior positions and provide support for others. Many of the participants described these feelings of empathy as integral to their character and felt that these skills helped them tremendously in their work. Participants found ways to utilise these skills to their advantage, whether the task involved making sales (as a salesman) or listening to patients and their difficulties (as a Doctor).

*“What I have written down here, just a little note, I have written down empathy, In my job as a salesperson, I think in your job as anything, if you have a strong degree of empathy then it helps. It helps immensely. Certainly with sales, and I think that being dyslexic, its hard and it’s like hardship building character, so I think that the fact that you have been told that you are stupid and slow and all of those things, you know how it feels and we all have difficulties in our lives and so understanding it and seeing people as people with their vulnerabilities is a good thing, and it may be a positive thing coming through all the difficulties. I recognise it as a key thing.” (A)*

*“I feel like empathy and not just for other people but for people in general who have trouble with things has just sort of become part of my character.” (G)*

The participants likened this strong sense of empathy to emotional intelligence.

*“Yes, I have so the idea of emotional intelligence, this ability overlaps with empathy, I don’t think it is anonymous but I think that it overlaps with empathy because you could do these things without feeling the things yourself and I think this overlaps with emotional intelligence and an ability to understand why people are feeling what they are feeling. This emotional intelligence is one of the most important things for someone who is going to be a novelist.” (D)*

*“There is something else which is that my areas of very strong ability is my ability to detect people’s feelings and changes in people and the state of people’s feelings” (B)*

*“A couple of the skills I think I developed because of my dyslexia is patience and the ability to get different perspectives, trying to see things through other people's eyes so I think that ok maybe they need to learn in this way or maybe they have this strong feeling inside them that you might not come across, having patience with someone asking why they feel certain ways or understanding the background really helps in my job” (B)*

Interestingly, one striking aspect of possessing ‘strengths’ is the additional disadvantages that often come with it. Due to the nature of the work of the criminal lawyer (for example, the fact that she had to deal with very difficult cases) it meant that her work would have a very direct impact on trials, case outcomes and, effectively, people’s lives. By being an empathetic person, she described how she was sometimes unable to ‘switch off’ after a day’s work and would sometimes worry a lot about whether or not she was doing the right thing during the course of her work.

*“Yes I think that part of the problem with me, and it may be part of the a dyslexia, but I also think that what I struggle with which isn’t really right for the profession, people are going into court all the time, and the thing is that I get far too emotional about it which means I worry then about it. I think then I worry about every single thing, I really want them to get the best results so I’m constantly like, ‘oh no should I of got them custody, should I have said this? Should I have said that?’ so I know I have to try and calm down because I’m not able to stop everyone. I think I’m too empathetic and I empathise a bit too much because I can’t stop thinking about it. I try to switch off afterwards.” (D)*

Similarly with the previous theme of ‘Teamwork’, it is uncertain whether these high achievers specifically attribute ‘Empathy’ as a result of their dyslexia or just as a strength they have developed outside of their difficulties with dyslexia. It is likely that this as a strength could be reported by any category of person. However what we could suggest here from the data is that the individuals do consider having to be important and even without it being specific to dyslexia, an important strength to be developed within the workplace in order for them to be effective in their work.

### Theme 9: Communication

Strong communication skills was a main theme which emerged throughout the participants. It can be interpreted as an additional coping strategy, as a partly compensatory mechanism for lack of written skills (Nicolson and Fawcett, 1999). Participants recognised it as a distinctive advantage in light of their weaknesses. Logan (2009) states that dyslexic entrepreneurs benefit from this skill, since it facilitates networking, clarity when setting goals, establishing trust and also motivating those who work with them.

The participants described how being sociable actually enabled them to attain ways of reaching higher levels of success in their work.

*“I was working with a supervisor and doing reports left right and centre and I was put in charge of doing the reports it went up to senior executives and so did a lot of socializing there and so got to the top quite quickly.” (E)*

Participants gave insights into the ways that they felt being sociable was a key part of their identity through making efforts to explain things to others and also to learn things from other people.

*“I definitely feel now like I’m in a job that I should be doing. Its just it just appeals to a very different parts of me, I like talking to people who are doing interesting things, I like explaining things, I like being involved in public conversation somehow, I feel I am involved in the world and so all those things are very appealing to me.” (G)*

Working in a job that was people oriented as well as working with a diverse range of individuals appealed to many of the participants as they felt that being in an environment that was socially stimulating enabled them to become familiar with people from a wide array of different backgrounds. The ability to relate to diverse groups of people also allowed the participants to practice patience and be able to work closely with and understand the various realities of different people. The act of being patient was also described in the example below and it could have been as a result of experiencing a number of difficulties previously that then allowed him to understand people much better and hence develop the capacity to relate to others well.

*“I like my job, very people orientated, working with a diverse range of people, presenting to a lot to big audiences, training people who are very slow at using computers in hospitals so I have a lot of patience with them, been doing that now for 2 and a half years” (B)*

In relation to having good verbal and communication skills, the participant below also described an example where it became a very helpful skill in response to dealing with a weakness. The perception of it, therefore, is that it was an important strength as demonstrated in order for the individual to overcome the senses of failure in other areas that they may be experiencing.

*“It was all verbal interviews and group exercises so I got in no problem. Only when I graduated they asked me to come back and they said, we would like you to do some IQ tests as well. I failed them miserably.” (B)*

Some of the skills mentioned by one participant included having a ‘sense of trust’ between himself and his clients. His desire to help others, along with being a generally sociable person, contributed to an overall positive work attitude, which then led to further feelings of personal success:

*“I think, one of the ways that I did it was, my behaviour suggested that they were going to stay with us, they were going to give us the business, we were going to respond in a partnership role and work with them, be led by them, do everything that they wanted us to do and assume in my dealings with them that everything was going to work out and we were going to be supplying them with the controls, and so it was a role, performing this role, and assuming that the right thing would happen, and it did, it worked, now whether that is a good life strategy and this is something that tried and it worked.” (A)*

Being a sociable person contributed greatly to an overall positive outlook on work, particularly for the lawyer who felt that her career was directly related to helping other individuals. This then became a source of motivation and the work that she was carrying out felt meaningful, causing her to become happy about her job and the reality that she was working in the field of law, rather than something like finance.

*“I was put in charge of doing the reports it went up to senior executives and so did a lot of socialising there and so got to the top quite quickly.” (H)*

*“You are always working in a team and you therefore need good interpersonal skills if you are going to succeed. You need to be able to go up to them and be able to ask them questions; you meet a huge amount of people.” (E)*

Similarly with the previous two interpersonal themes of ‘Teamwork’ and ‘Empathy’, it is uncertain whether these high achievers specifically attribute ‘Communication’ as a result of their dyslexia or just as a strength they have developed outside of their difficulties with dyslexia. It is likely that this as a strength could be reported by any category of person. However what we could suggest here from the data is that the individuals do consider having to be important and even without it being specific to dyslexia, an important strength to be developed within the workplace in order for them to be effective in their work.

### Theme 10: Range of Experience: Job sampling

Participants mentioned how in many cases they had left school without knowing their strengths. Therefore, in the early stages of their career, some participants experienced having many jobs before feeling settled into a single career. Once settled in a job, participants then attempted to ‘craft’ it to their strengths and preferences. They considered that the broad experiences they had built up from different jobs, and from working with different colleagues, gave them valuable insights into teamwork and creativity.

Many of the issues concerning the finding of appropriate jobs for dyslexic adults, to match their particular skills, relates to the anxiety of getting into a job in the first place. One of the most important things for such individuals is that they, first of all and from the outset, get into a job; which is often viewed as the first hurdle to overcome. Feeling secure in a job was important for such individuals and, hence, any risk of jeopardising this job, especially in the early stages of their career, was a cause of anxiety.

*“Because I was in this organisation, I had worked myself up to a sort of middle-Management level, I couldn't leave. So there was an element of enjoying it, being successful but also feeling trapped.” (A)*

Though most of the high achievers felt that they were now in a job which they deemed fulfilling, in many instances it meant that they had initially experienced a number of years of being in jobs which were not entirely not inline with their skill sets. However, because certain jobs were perhaps an easy and available opportunity to take, they would jump into the job and then decide to stay within the job, despite it not being what they truly wanted to do.

*“I went on to study geology again, I think finding something I could do, I just grabbed it and moved in with it, so that is the other thing. This is a slight issue and something I have noticed is that when they see something that they can do, they grabbed onto it and followed through and then thought later on that kind of and maybe it wouldn’t be the thing that fully fulfilled them” (C)*

*“I actually didn’t start off with Architecture. I applied for structural engineering at Cambridge, Durham, Sheffield and I got into all of them and then I called them all up and I had decided over the summer that I wanted to do architecture.”   (F)*

Feeling ‘trapped’ in an organisation was a big issue for many of the participants. Even though they were in decent jobs and receiving good salaries, it still wasn’t necessarily a job which they felt absolutely comfortable with and, in some cases, they were still unable to fully work to their strengths.

*“I knew what I was doing; it was a good and caring company. [Pause] I felt a bit trapped, I never earned megabucks, but I earned a decent salary, it didn’t pay huge amounts, and it went up a bit each year.” (A)*

For some participants, seeking to avoid certain tasks often involved changing jobs on a regular basis. For those participants who continued in a certain job, they would find ways to avoid particular tasks which specifically highlighted their dyslexia, out of fear that their dyslexia would be discovered and to avoid such an outcome.

*“I say I have had as many careers as jobs, as I kept jumping around and doing different things, and again it was to jump to anything I could do, in the same way as I said before and possibly each job coming to I was waking out of step with everyone else. I could never keep on with anything for about 2 years, I kept changing one thing to another thing always feeling slightly out of step, again it is this habit of not asking for help which tends to hamper you.” (C)*

*“At work I struggled, at first at this company called Honeywell. I started as an inside sales engineer, answering the phone and answering technical enquiries, and at first I was even nervous of answering the phone and I didn’t know who it was going to be and what questions there were going to have, I had to write letters, I had never written letters before. So it was very difficult for me to do.” (A)*

## Inter-rater agreement

The transcripts for participants A (Salesman) and B (NHS Software Consultant) were independently rated to check the validity of the identified themes.

Instructions to raters

Two raters were asked to review the allocated themes given to the paragraphs across two of the interview transcripts. They were asked to read the transcript with the themes, which I had allocated to each paragraph, and decide whether they either ‘agreed’ or ‘disagreed’ or had a suggestion for another theme they would have alternatively allocated instead. This was carried out in this way so that I could gain greater clarity on the themes allocated to the participant’s reflections and ensure that my overall super-ordinate themes were as accurate as possible.

Table 8 column 2 (N1) indicates the total number of times rater 1 coded a given theme.

Column 3 (N2 & N1) indicates the times rater 1 (R1) and rater 2 (R2) both coded the same theme for the paragraph.

Column 4 (N2 not N1) indicates the number of times R2 coded it as a theme and R1 didn’t.

The % Agreement Kappa is calculated using the following formula:

% Agreement =

Kappa is calculated based on the equation:



Kappa (*K*) =

*P*(a) denotes the observed percentage of agreement, and *P*(e) denotes the probability of expected agreement due to chance.

For participant A, the transcript was split into 157 units. 7 out of the 10 themes were identified by the primary rater. For these themes the corresponding percentage agreements and the kappa inter-rater agreement statistic were as follows.

**Table 4.2: Participant A: Kappa Inter-rater agreement**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Theme** | **N1** | **N2 & N1** | **N2 not N1** | **Agreement** | **Kappa** |
| ***Determination/ Resilience*** | 25 | 20 | 1 | 96% | 0.85 |
| ***Proactivity*** | 2 | 1 |  | 99% | 0.66 |
| ***Flexible Coping Strategy*** | 11 | 10 | 3 | 97% | 0.82 |
| ***Big-picture approach*** | 4 | 4 |  | 100% | 1.0 |
| ***Visuo-spatial skills*** | 1 | 1 |  | 100% | 1.0 |
| ***Innovation / Creativity*** | 3 | 3 | 1 | 99% | 0.85 |
| ***Teamwork*** | 4 | 3 |  | 99% | 0.85 |
| ***Empathy*** | 4 | 4 |  | 100% | 1.0 |
| ***Communication*** | 2 | 2 |  | 100% | 1.0 |
| ***Job Sampling*** | 6 | 4 |  | 99% | 0.79 |
| **Overall** | **62 mentions** | **52** | **5** | **90% agreement** | **0.80** |

For participant B, the transcript was split into 119 units. The inter-rater agreements was as follows:

**Table 4.3: Participant B: Kappa Inter-rater agreement**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Theme** | **N1** | **N2&N1** | **N2 not N1** | **Agreement** | **Kappa** |
| ***Determination/ Resilience*** | 26 | 23 | 2 | 96% | 0.88 |
| ***Proactivity*** | 0 | 0 |  | - | - |
| ***Flexible Coping Strategy*** | 12 | 12 | 2 | 98% | 0.91 |
| ***Big-picture approach*** | 8 | 8 |  | 100% | 1.00 |
| ***Visuo-spatial skills*** | 0 | 0 |  | - | - |
| ***Innovation / Creativity*** | 5 | 4 |  | 99% | 0.88 |
| ***Teamwork*** | 3 | 3 |  | 100% | 1.00 |
| ***Empathy*** | 5 | 4 |  | 99% | 0.88 |
| ***Communication*** | 1 | 1 |  | 100% | 1.00 |
| ***Job Sampling*** | 4 | 4 |  | 100% | 1.00x |
| **Overall** | **64 mentions** | **59** | **4** | **94% agreement** | **0.85** |

Expected and Unexpected Themes

When comparing the findings with the literature, a number of similarities as well as differences in themes were observed. Some of these observations were expected, while others less so.

Such similarities between participants and current insights into dyslexia strengths included, for example, the ‘big-picture’ approach to tasks associated with practical and problem solving skills, a sense of intuitive empathy with others and the recognition of patterns of information. Noticeable differences between participant’s insights as well as insights from the literature included, for example, proactivity, flexible coping strategies, initial job choices made at the outset of a career leading to experience, high levels of determination and innovation within the workplace with opportunities for creativity. The main themes extracted from the transcripts numbered ten in total. These themes were then grouped into three separate categories of strengths as well as an integrative strength underlying all three categories.

|  |  |  |
| --- | --- | --- |
| Work-related Character Strengths | Talents / Cognitive Strengths | Social Inter-personal strengths |
| Determination/Resilience (87%)  *Participants felt generally that they were very determined. From past experiences and difficulties, they felt that they could apply this experience in a positive way to be more determined and focused people. The desire to achieve was balanced with a strong work ethic to work hard and not see barriers as obstacles to success Relating experiences back, participants considered that stressful experiences during school life had made them more resilient and when experiencing difficulties in their work environment they felt that they could quickly bounce back.*  *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*  Proactivity (80%)  *Participants described how they felt able to think ahead and cope with actualities. To cope with future challenges and difficulties there would be an element of preparation and increase in the amount of time spent on tasks.*  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Flexible Coping (75%)  *Participants were able to identify instances where, in the moment when something was deemed difficult or challenging they were able to work around it and come up with coping strategies. They considered that timely use of these coping strategies was central to their success. They felt it prevented stress, increased confidence and motivation for work, and also allowed them to identify future risks and problems.* | Big-Picture approach (87%)  *Participants recalled experiences from the workplace and other organisations, which highlighted examples of them being able to see the big-picture on tasks they were undertaking. By being able to see the end of things and to have a holistic approach to their tasks, they were able to maintain motivation and vision for their teams and colleagues.*  *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*  Innovation Given Opportunities for Creativity (62%)  *Participants felt that they were generally creative people and were innovative given opportunities for them to be so. When such opportunities were given to them, they could excel and became the creative leaders in their work environments.*  *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*  Visuo-Spatial Skills (50%)  *Some of the participants felt in particular that they had specific skills relating to visuo-spatial skills. This included variations in describing the skill in other ways, such as enhanced spatial awareness, 3D imaging and modelling. The participants described this as an inherent talent they felt they innately possessed as opposed to something that they had consciously developed.* | Teamwork (62%)  *Most participants considered that they were good at working in teams. Because of previous experiences of difficulties, they didn’t necessarily find it difficult to approach and consult with others and to ask for help.*  *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*  Empathy for Negotiation and/or Support (75%)  *Participants described how they felt a strong ability to recall emotions and to sense the emotions of others. By utilising this in the workplace, they were able to quickly to move into senior positions and provide support for others.*  *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*  Communication (75%)  *Participants described the ability to communicate effectively with others as a response to making up for the other weaknesses that they had. The development of the ability to communicate well with others was also attributed to having asked for help in response to their difficulties.* |
| Range of Experience: Job Sampling (50%)  *Participants mentioned how in many cases, they left school without knowing their strengths. Therefore, in the early stages of their careers some experienced many jobs before feeling settled into a career. Once in a job, they attempted to ‘craft’ it to their strengths and preferences. They considered that this broad experience of different jobs, and different colleagues, gave them valuable insights for teamwork and creativity.* | | |

**Table 4.4: Summary of Themes: The High Achievers**

\*The percentages show the frequency by which the participants recounted experiences relating to the particular strength in question

## Discussion

This study was carried out as a basis of the first phase of this exploratory design study into the self-reported strengths of dyslexia in adults. Interviews were carried out using Interpretative Phenomenological Analysis and was designed to investigate the individuals subjective experience into what they perceive their strengths to be. Interestingly, it was observed that, although there were substantial differences between some of the professions, dyslexic adults from each profession commented similarly on their feelings towards their work and had similar perceptions of both themselves and their dyslexia, though the direct application of how their work was undertaken and applied to themselves was different.

What became clearer throughout the analysis of the interviews was how these themes which were based upon self-reported strengths appeared to begin to naturally categorise into three lines of thinking.

The first was to consider which of these self-reported strengths were developed as a consequence of being diagnosed with dyslexia. Second, which of the self-reported strengths do the participants see as innate gifts that come with dyslexia. Third, which of the self-reported strengths do the participants see as personal abilities regardless of being dyslexia, albeit still affected by dyslexia.

These areas of analysis will be how I structure this discussion. What is also apparent through the analysis however is also how these strengths in spite of these three broader analytical observations give rise to the development of a theoretical taxonomy of –self-reported strengths. Theoretically, such a framework will provide a positioning of dyslexia strengths never before outlined in the literature. A framework that seeks to unite the various perspectives of dyslexia strengths. A framework by which is inclusive of the majority of individuals in work with dyslexia, whether you are coming from the perspective of no strengths/innate strengths that come with my dyslexia/ or strengths developed as a consequence of having dyslexia. Such a taxonomy I will describe towards the end of this discussion, but broadly It can bring in categories of strengths entitled, Work, Cognitive and Interpersonal Strengths.

To begin, in order to show validity in the analysis of the themes, following the study an Inter-rater Reliability test was undertaken by other researchers in the department. The inter-rater agreements for the two interviewees checked proved to be high, with the majority of the individual themes having a kappa of over 0.80, and the overall kappa agreements being 0.80 and 0.85 respectively. These are considered high levels of agreement (Hallgren, 2012).

The themes found in the grouped into three areas of self-reported strengths. This allowed for the structure of analysis to be clearer:

1) Work-related character strengths *(determination and resilience, proactivity and flexible coping strategies*);

2) Cognitive strengths *(big-picture approach, visuo-spatial skills and innovation given opportunities for creativity)*

3) Inter-personal strengths *(empathy, communication and teamwork)*.

There was a further integrative strength, an experiential strength, which I labeled *experience/ job sampling*.

Much of the initial explanations of the findings has already been given in the analysis as well as the literature review supporting the findings can be made reference too in previous chapters, particularly chapter 2. Therefore in order not to repeat myself I will be structuring the discussion in light of the three questions posed at the start of the discussion. They will then be discussed in light of a theoretical taxonomy of strengths.

The first was to consider which of these self-reported strengths were developed as a consequence of being diagnosed with dyslexia.

I found here that there was some overlap depending on the participant. This was clear as these were self-reported strengths and every individual described their experiences of having dyslexia in a variety of ways. Those themes which were related to these I felt corresponded to work strengths of determination and resilience, flexible coping with some overlap in to the interpersonal strengths of empathy and communication skills. The rationale behind why these strengths could be seen as developed as a consequence of being diagnosed with dyslexia was that in explanations of participants in relation to having to cope with their dyslexia. For example, Because of the relative weaknesses that participants constantly felt that they were facing, their success could be strongly attributed to their determination to succeed and the resilience they had developed in response to encountering setbacks.

The concept of *Resilience*, as an ongoing theme throughout these interviews, was quite unique as compared to the other character strengths which were also noticed of the participants. The participants felt that they needed to take both proactive and reactive measures in the face of adversity. They recognised that their skills of optimism provided a technique for bouncing back from such situations where their dyslexia was causing them issues. Having previously experienced significantly negative setbacks, they were able to use their capacity for resilience in a positive way. They were able to recognise and acknowledge the impact of the negative event, then allowing themselves to invest time, energy and resources into recovering, rebounding and bouncing back from setbacks. They were also able to see these negative opportunities as “springboards” or opportunities for growth beyond the setback.

No doubt this theme could be related to anybody in the workplace and that resilience is not just attributable to dyslexia, however in response to the challenges of dyslexia, participants did feel as though this was as a consequence of being diagnosed as dyslexic.

A similar explanation could also be said in lights of *Determination* being developed as a strength. Participants also described *Determination* as being a key character trait and a key contributing factor to their success. Because of the increased levels of *Resilience* needing to be practiced regularly participants felt it led to increased determination. In a manner of wanting to ‘prove their ability’ to their peers and even sometimes their family. As a consequence of experiencing the setbacks faced by their dyslexia *Determination* was a resulting factor. No doubt this could also be present as a strength in anyone who is facing setbacks in their workplace environment and of course this theme is not exclusive to Dyslexia. However it is evident from these interviews that it plays a very significant role in dealing with one’s dyslexia.

As another response to how individuals coped with their dyslexia and therefore felt it developed as a response to their dyslexia was themes of proactivity and flexible coping. Proactive behaviour involves acting in advance of a future situation rather than just reacting ([Parker, Bindl, & Strauss, 2010](#_ENREF_90)). Participants described how they were able to take control of situations in advance and prepare for expected difficulties which may arise. Proactivity is different to flexible coping strategies, as this refers to the needs for immediate response to a change occurring, whereas proactivity concerns initiating change from the outset.

Participants were most readily able to show signs of proactivity in moments that involved preparation for tasks in the workplace. In light of them feeling that they may encounter setbacks due to their difficulties they would spend more time preparing for their work and spend more time on understanding the nature of the tasks that they needed to undertake. In some situations, they would be actively thinking ahead to anticipate the difficulties which they may encounter and act upon them accordingly to prepare. Some of the reasoning behind the proactivity experienced by the dyslexic participants, was for example, to help them in managing their careers ([Seibert, Kraimer, & Crant, 2001](#_ENREF_102)).In situations where dyslexic students have had to cope with various pressure in school or work, participants described that it was in response to experiencing difficulties relating to numeracy or literacy comprehension. After years and years of experience with these problems, participants described how they were able to think more responsively about how to deal with difficult situations and external demands which would arise and which they would consequently have to deal with. Participants described how they were able to come up with strategies ‘on the spot’ in order to deal with challenges.

The second consideration in this discussion is to remark on which of the self-reported strengths do the participants see as innate gifts that come with dyslexia. As described in previous chapters the idea of innate strengths of dyslexia comes as an ongoing debate within dyslexia research (CITE). The participant tended to describe instances where they were able to recall examples of displaying a big-picture approach to tasks and also elements of visuo-spatial ability ([Attree et al., 2009](#_ENREF_5)).. Creativity and abilities to be innovative were also highlighted as essential innate traits which for some of the participants became vital to the development of their work place environment. There were also insights into how dyslexic individuals could even be sought after because of such talents, with examples from creative industries such as Google, and Pixar (CITE). In regards to enhanced visuo-spatial awareness, the architect, in particular, made specific reference to the ability to transform images into real-life images and described how it enabled his to make steps in his work to create better drawings as well as being a valued individual within the architectural firm in which he worked when carrying out design work. Despite the compelling individual cases presented in previous research on visuo-spatial abilities in dyslexia, as well as in case studies such as this one and those case studies carried out by West (1991, 2009), it has nevertheless proved difficult to demonstrate *where* the skills of dyslexic adults outperform their non-dyslexic peers. At this stage it is perhaps wise to not view these self-described ‘talents and innate as an *absolute* strength of dyslexia, but rather as a strength relative to various individuals; however, there will certainly be some individuals who have a particular enhanced capability in this strength and will also be dyslexic. The summary that *“Studies have reported superior, inferior, and average levels of visuo-spatial abilities associated with dyslexia”* outlines the current status on the visuo-spatial abilities of dyslexics at the present time ([von Karolyi et al., 2003](#_ENREF_124)).

The third aspect of this discussion is in relation to which of the self-reported strengths do the participants see as personal abilities regardless of being dyslexia, albeit still affected by dyslexia. The interpersonal strengths identified by participants in particular seemed to resonate particularly with the idea that these are personal abilities attributed to the individual as opposed to as a result of being inherently dyslexic. Not all dyslexic individuals for example will be particularly empathetic, communicative or good in teams. However what can be noted is that again, as a result of one’s dyslexia through life experience certain skills can of course be developed. As described at the start of the discussion individuals can become more determined and show higher levels of a resilience as a result of the difficulties they have faced. In this study, the participants reported using a number of effective coping strategies and felt that, on balance, the advantages of being dyslexic outweighed the disadvantages in terms of their ability to have greater empathy for and heightened understanding of other peoples problems. This finding resonates with studies by Riddick et al in relation to school teachers who were dyslexic. The third interpersonal strength was in good communication skills. Strong communication skills was a main theme showing throughout the participants. It can be interpreted as an additional coping strategy, as a partly compensatory mechanism for their lack of written skills (Nicolson and Fawcett, 1999). Participants recognised it as a distinct advantage in light of their weaknesses. Logan (2009) states that dyslexic entrepreneurs benefit from this skill, since it facilitates networking, clarity when setting goals, establishing trust and also motivating those who work with them.

Once again, any of these strengths could have been attributed to any category of person. However what was striking here was that out of a small band of participants they were able to draw out such similar patterns of self-reported strengths. They were also able to draw out distinctive examples of how they felt these strengths were manifested. In all of these self-reported strengths what becomes clear is how having a range of experience in work has enabled them to be able to understand better what their strengths were and to be able to draw out distinctions as to what appears to be more innate and what appears to be more developed as a result of experience. A question, which poses further work, however is the final point around whether the interpersonal skills associated with dyslexia could have been reported by any category of person. Further studies drawing out comparative groups would be very useful in order to investigate this distinction further.

## Limitations

A generic limitation of any experiment is that you are trying to generalise the results of that experiment to an overall population. Therefore, the question remains representative. Are these particular results across the population of successful adults?

I used a sample size of eight participants. Though this number was sufficient for the purpose of this study and fulfilled our aims and objectives, the question following this was to understand how such themes are representative across a larger number of dyslexics. Hence, the next study seeks to investigate the experience of strengths from the perspective of experts in the field of dyslexia, in order to understand how representative these findings are compared to a broader sweep of people.

One of the issues that cannot be resolved by the qualitative analyses is the generality of these findings. Is it the case that most high achieving adults would show the strengths in work skills, co-genitive skills and social skills that I identified here? Do these high achievers specifically attribute ‘Communication’ as a result of their dyslexia or just a skill, which they have developed outside of their difficulties with dyslexia? I attempt to resolve these issues later in the thesis by examining the relative strengths in these domains for dyslexic and non-dyslexic students.

The second core issue engages the following question: Have these findings have anything to do with dyslexia? With the participants selected I took eight individuals from different professions. However these obviously do not represent the entire range of other types of disciplines which I could have taken into account. For a study of this kind, especially a qualitative study further exploration is required and different types of disciplines are to be considered and relevant interviews subsequently conducted.

The third limitation of study 1 is that these are self-report interviews with no objective quantitative analysis. This kind of study is essential however, as it lays the foundation for then further potential study and quantitative analysis to be conducted and for other methods to also be tested out.

## Theoretical Implications Towards the Development of a Taxonomy

The following question arises from this discussion. If we were to develop a taxonomy in relation to self-reported strengths, where will it actually take us? Positive Dyslexia comes strongly to the forefront again here. Even if these strengths are relative strengths and if they are self-reported there is still a good chance that someone with dyslexia may relate to one or more of the featured strengths. Even if they have not then they can still use this framework to identify an area they may want to focus on and develop further. A study carried out in 2013 by Poli Sepulveda in the Institute of Work Psychology was carried out on dyslexic entrepreneurs from the UK and Brazil and following a similar framework and methodology. From her study she also found similar self-reported strengths found in this study. This has helped to strengthen the suggested strengths Taxonomy. Further studies will be undertaken to explore this.

## Conclusion

The interviews conducted with high achievers highlighted a significant need for dyslexic individuals to understand their personal and unique set of skills and strengths, in order to enable them to develop and build successful careers. What appears clear is that each individual dyslexic has a unique pattern or ‘constellation’ of strengths. If all are taken into account, then perhaps more unusual talents and strengths may not be well noticed and will fall into the general ‘noise’. However, when looked at individually then a wider range of ‘success’ strengths come to the forefront which are perhaps unique and relative to the individual. The themes then categorised into a ‘three-domain’ taxonomy of strengths. These comprise the [unconventional] ‘cognitive strengths triad’ of big picture approach, innovation and creativity and visuo-spatial ability, and the [unconventional] ‘inter-personal strengths triad’ of empathy, teamwork, and communication, augmented in the successful careerists by the [conventional] ‘work strengths triad’ of proactivity, determination and resilience and flexible coping.

This was very useful as themes from the interviews could then be grouped together in accordance with strengths noted from the literature review, leading to a clearer perspective on what the strengths of dyslexia actually are, both individually and in relation to each other. In order to address the limitations of this study, what is now required is richer insight into how these strengths can be generalised across a larger sample of people. Therefore study two will investigate the strengths of dyslexia from the perspective of dyslexia experts who have, in their experience from both research and practice, the ability to offer a holistic perspective on how these strengths are represented across a wider population of individuals.

# CHAPTER 5: Study 2: Interviews with Dyslexia Experts

## Introduction

Focusing my initial investigation of the strengths of dyslexia amongst high achievers, I was eager to explore how the experts views compared with the findings of study 1, particularly in relation to the investigation and categorisation of strengths into interpersonal, work and cognitive strengths. Eager to investigate and understand how these strengths are represented across broader groups of dyslexic individuals, I undertook a series of interviews with experts working in the field of dyslexia research and practice in order to tap into their experiences of working with many dyslexic individuals over the years. Some of these experts have been pivotal individuals in the development of research theories exploring the underlying causes of dyslexia, while some are experts through advocacy and have been working with dyslexic children and adults for many years and were thus selected to represent a range of approaches and experiences. Each boasts extensive experience and knowledge on the needs and issues facing the dyslexia world, offering a unique opportunity to unite their perspectives into an understanding about the directions this research could potential take.

## Aims and Objectives

1. To address the limitations of the previous study by looking to experts views to see if themes identified in study 1 is representative across the wider range of dyslexic individuals that they have encountered in their work and experience.
2. To understand and consider which themes emerge explicitly by the experts and which were not considered to be neither important nor implicit.
3. To see if the experts independently, further identify any further strengths which should be considered.
4. To open up a discussion that would bring to light the overlap between the experts in their perceptions on the strengths of dyslexia and how they perhaps differed from each other in light of the interviews with the high-achievers.

## Method

A similar methodology was used to carry out this study as the methodology used in Study 1, with an appropriately modified interview schedule. See Chapter 3 for details of the process of data collection and analysis.

### Ethics

Ethical approval was obtained from the Institute of Work Psychology Ethics Committee. All participants signed consent forms and provided a recorded confirmation before the start of the interview. They were informed of the right to withdraw at any point during their participation in the study. The participant's names were coded for the purposes of confidentiality.

### Interview Schedule

As we were interviewing experts in the field of dyslexia research as opposed to high achieving dyslexics, a different interview schedule used.

This particular interview schedule was put together in order to address several key research questions. Firstly I wished to gain a deeper understanding of their perspective of dyslexia strengths and how these strengths are seen across a broader population of dyslexics. Therefore, the questions were tailored in order to ask the experts about their experiences of working with dyslexic individuals and how well these strengths have been represented in their experience. The findings from study 1 indicated the possibility of categorising strengths into various domains. I wished to explore how such an idea would be possible from the perspective of the experts, hence questions were asked which pertained specifically to interpersonal, cognitive and work strengths. Through the experts experiences of working with larger numbers of dyslexic individuals and across a variety of age ranges, I was also interested in gaining particular insight into the experiences of identifying and supporting dyslexic individuals in relation to the remediation of their weaknesses as well as the cultivation of their strengths. This was also an opportunity to gain an understanding about the possibility to move this research forward and to consider other potential factors from their experiences.

The interview schedule was composed of five sections (See Appendix 8 for detailed schedule).

The first section explored the background of the experts’ experiences within dyslexia research and practice. Questions were asked with the aim of exploring how the experts individually moved into this particular area and how they had carried out their work to date.

The second section explored their experiences of working with dyslexic individuals. The questions aimed at exploring their specific experiences relating to how dyslexics cope in the workplace and within education.

The third section explored perceptions of dyslexia strengths in relation to their own experiences. Experts were asked how they thought a ‘strengths based approach’ could be applied to dyslexics and how they could benefit from it.

The fourth section explored the various approaches adapted within dyslexia research and how much they agreed with the classification of strengths in terms of cognitive, social/interpersonal and work strengths as well as how representative these strengths are perceived in their experience, in having worked with a wide range of different dyslexic individuals.

The fifth section explored what kind of ongoing support is required for individuals with dyslexia and ho the difficulties associated with dyslexia can impede on their potential success.

### The Participants

The experts who were interviewed were divided into different categories depending on their specialist areas. Some of the experts were research experts (with a broad overview of knowledge on dyslexia), some were representatives of dyslexia organisations, a few were focused on the areas of dyslexia assessment and support, while others dedicated their work to the development of literature on the talents of dyslexia. It was important to interview a range of dyslexic experts, given that the field itself is evidently so broad.

**Workplace professionals**

#### Dr David McLoughlin and Carol Leather (A)

Dr McLoughlin is a registered Educational and Occupational Psychologist, providing diagnostic assessments to dyslexics of all ages, including children. He also provides career guidance for adolescents and adults. He has acted as an adviser to the BDA and is the principal author of ‘Adult Dyslexia: Assessment, Counseling and Training’ and co-author of ‘The Adult Dyslexic: Interventions and Outcomes’. Carol Leather directs the educational and training activities of the Independent Dyslexia Consultants. She has particular expertise in providing advice to dyslexic individuals in the workplace and to their employers and trainers. Carol conducts one-to-one workplace skills sessions and work place assessments with students in further and higher education. These individuals were chosen for interview based on their ongoing work supporting dyslexic adults, particularly in the workplace.

**Representatives of Dyslexia Organisations**

#### Dr Kate Saunders (B)

Dr Saunders is Chief Executive of the British Dyslexia Association. With over 25 years of experience in the fields of both dyslexia and special educational needs, Dr Saunders was chosen for interview given her ongoing experience in dyslexia advocacy and her engagement with dyslexia support at the level of policy and public practice.

**Researcher/ Talent focussed**

#### Thomas West (C)

Tom West is the author of In the Mind’s Eye (1991 and 1997) and *Thinking Like Einstein* (2004). With a particular interest in the cognitive strengths of dyslexia, Tom focuses on aspects of visual-thinking, visual giftedness and creativity in relation to dyslexia, drawing upon the lives of individuals such as Einstein, Faraday and Maxwell as individual examples of giftedness and exceptional talent. Tom was interviewed based upon his expertise in the cognitive strengths surrounding dyslexia and his insights into how such strengths can be further investigated .

**Researcher**

#### Professor Angela Fawcett (D)

Professor Fawcett is a leading international researcher in dyslexia and other developmental disabilities, with a range of theoretical and applied contributions. Her approach is broad and interdisciplinary, ranging from child and cognitive development, to educational screening and intervention, to developmental cognitive neuroscience. Angela was inspired to enter the dyslexia research world through her own personal experience of having a son and husband who are both dyslexic.

**Dyslexic Assessors/ Consultants/ Talent focused**

#### Dr Brock Eide (E)

As dyslexia experts, authors, lecturers, and consultants, Dr Brock Eide and his wife Dr Fernette Eide run an international referral clinical practice for dyslexia, dealing with gifted issues and dyslexia, sensory processing disorder, dysgraphia, and other conditions. They are dedicated to fostering gifts, creativity, and strengths in each child that attends the clinic, as well as pinpointing their learning challenges in order to optimise growth and development. They are authors of *The Dyslexic Advantage* (Eide 2011). In particular, they have made special contributions to the development of the understanding the cognitive strengths of dyslexia, particularly in the development of the concept of ‘MIND’ strengths. Dr Brock Eide was interviewed based on his work in the development of the cognitive strengths of dyslexia as well as his experience in working with children and their families on an ongoing basis until adulthood.

**Educational Psychologist/ Assessment Focused on Success**

#### Dr Gavin Reid (F)

Dr Reid is an international award winning author, educational psychologist and international seminar presenter.  He has ten years worth of experience as a classroom teacher and extensive experience in relation to the diagnosis and support of dyslexia. He has authored and co-authored many books, including *Dyslexia: A Practitioners Handbook and Dyslexia: A Complete Guide for Parents and Those Who Help Them and Dyslexia in Adults: Education and Employment*, as well as many others. Dr Reid was interviewed based on his vast experience in the diagnosis and support of dyslexia and his knowledge on the ways in which the dyslexia strengths movement could potentially be moved forward.

**Researcher**

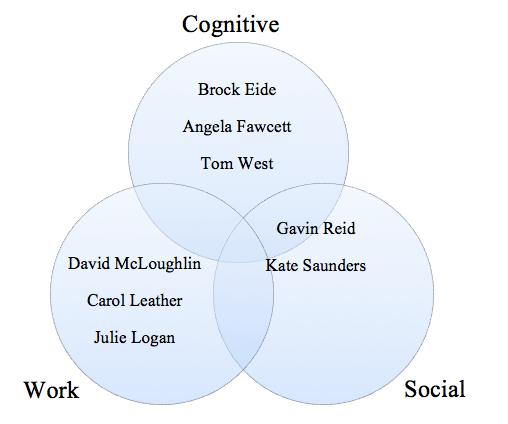
#### Professor Julie Logan (G)

Professor Logan is a Professor of Entrepreneurship as Cass Business school in London.. She has an active interest in studying government policy on innovation and entrepreneurship, but also in entrepreneurship education and entrepreneurs with disabilities, having previously published work on the links between dyslexia, education and entrepreneurship funded by the Kauffman Foundation and the British Dyslexia Association. Professor Logan was interviewed based on her expertise in dyslexia and its links with strengths in entrepreneurship.

## Experts’ Focus of Research

Based on the known focus of research of each of the dyslexia experts, I grouped the specialty of each of the experts in the following way (see figure 5.1). The purpose of this initial grouping was to show how varied the approaches within dyslexia research and practice are, to investigate the varied ranges of specialty across each of the dyslexia experts and to demonstrate the range of experience and insight that will potentially be gained through the interview process. Many of these experts, however, do not specifically sit within one confined category, but may overlap into other domains.

**Figure 5.1: Venn Diagram to show the overlap in focus of research specialty between Experts**



## Analysis

The design of the interview structure followed the same pattern of analysis as the interviews with high achievers. Themes were extracted from the interview transcripts by following the 5-step IPA process.

## Results

The interview schedule for the experts contained questions which were designed to probe the conversation on the topic of ‘strengths’ in dyslexia. There were a variety of questions, through which each of the experts described the lived reality for dyslexics and also spoke on issues of support, advocacy as well as the weaknesses and associated difficulties of dyslexia. These were categorised into three main themes, namely 1) strengths of dyslexia, 2) workplace and dyslexia and 3) support for dyslexia*.*

The following super-ordinate themes were derived from the interview transcripts using Interpretative Phenomenological Analysis.

**Strengths of dyslexia**

* 1. Theme 1: Strengths based research needed
  2. Theme 2: Recognised strengths already seen
     1. Work success factors
     2. Cognitive strengths
     3. Interpersonal strengths
  3. Theme 3: Consequences of not finding strengths

**Workplace and dyslexia**

1. Theme 4: Benefit for individual and the workplace
2. Theme 5: Barriers in the workplace for dyslexics
3. Theme 6: Gaining experience through work

**Support for dyslexia**

1. Theme 7: Ongoing support
2. Theme 8: Areas of difficulty for dyslexics

## Strengths of Dyslexia

### Theme 1: Strengths based research needed

The participants began by describing *why* it was important to focus on strengths. There was a consensus that much of the literature has been focused on the relative weaknesses of the individuals and their remediation. They also related to how essential the building of strengths was in relation to career advice. The experts frequently mentioned that the positive approach to dyslexia was very much welcomed and something that needed to progress further. They described how essential it was for a majority of the focus on dyslexia to be centered on the positive aspects of dyslexia as opposed to just focusing on the relative weaknesses of dyslexia, and also stated that the two should also be seen as ongoing hand in hand with one another.

*“Well firstly this is a very welcome area that you are looking into, because it’s something that the BDA feels very strongly about. That there should be this awareness into the positive side to dyslexia as well as the understandable beliefs.” (B)*

*“It is important for the individual to recognise that they could have strengths because people spend far too much of the time looking at what they can’t do and they always know what they can’t do but they can’t necessarily recognise what are their strengths.”  (D)*

Many of the participants relayed how the understanding of one’s strengths is particularly relevant in relation to career advice and in guiding individuals along appropriate career paths. One of the main points mentioned by the participants was the importance of an adequate job fit and how the skills of someone with dyslexia need to be appropriately identified and then matched to specific careers.

*“Career guidance and career help is something which we are always asked for here and it is absolutely fundamental that people with dyslexia are in a career and job which matches their skills.” (A)*

*“The importance of job fit. Thinking about these fits within a job and how people can really find a career path in particular. Why is it particularly important for people with dyslexia.” (E)*

*“It is essential for everybody, but for dyslexic people it is much more essential because of what they tell me, they have more confidence, they are much better able to do jobs because they have a passion.” (A)*

Overall, the experts shared a view of the importance of a strengths based approach to supplement the efforts made to understand the relative weaknesses of individuals who have dyslexia.

### Theme 2: Recognised strengths

The participants were asked to describe what they viewed the strengths of dyslexia to be from their experiences of working with dyslexic individuals over the years and also in light of their own research. Many of these were consistent with the findings from the first part of the interviews with High Achievers. Particular strengths were highlighted under work success factors, a description of associated cognitive strengths as well as interpersonal strengths.

#### Work success factors

Positive character traits

From the experiences of the experts, they described how individuals with dyslexia had developed a strong sense of determination and resilience in light of the challenges and difficulties that they had had previously faced, particularly in their early school years. The concept of having a passion for work was also highlighted, as was the role of how determination in overcoming challenges in the workplace and how children often become more determined when they found something which they were good at.

*“It is essential for everybody, but for dyslexic people it is much more essential because of what they tell me, they have more confidence, they are much better able to do jobs because they have a passion.” (A)*

Experts also described how having other skills such as good verbal skills, as well as social skills, enabled someone with dyslexia to begin to achieve success. When questioned more on this it was noted that good social skills were particularly seen within individuals who had a strong sense of determination.

*“They often have very good social skills, and sometimes they use those to their advantage in order to overcome their difficulties, determination. For those who have succeeded, they have internalised a strong personal and self-belief that what has helped them to keep going.” (C)*

Experts described that, because of the inherent difficulties associated with dyslexia and for that matter any other kind of difficulty as individual could be facing, they may have become able to develop levels of inherent resilience in response to these challenges and difficulties. Perseverance was mentioned as an essential quality with regards to owning a business. If you have been knocked back so many times and have been so used to failing over and over again, then the build up of resilience becomes very useful, as there may be times when business could become challenging.

*“The trouble is that anyone who owns their own business has got to have perseverance but if you have been knocked back so many times and you have been used to failing then that’s quite a useful thing to have in business as well.” (G)*

However, the experts, in some instances, did mention that this is a process and something which needs to be worked on, as a majority of dyslexic individuals may still leave school with very low levels of self esteem as a result of these negative experiences and their resilience begins to be built when they begin working to their strengths across other domains.

*“Individuals that traverse through that whole “formation of self-concept” period without being connected with some positive sense that they have talents and abilities that can lead to valuable and enjoyable performance in some area really struggle, and even when they later find some area where they’re able to achieve success, they still have tremendous difficulty feeling like they’ve gotten by on luck, or that it’s soon going to crumble, or that they’re imposters, or that they’re getting by on talent that they don’t really possess.” (E)*

The building of resilience was also mentioned in light of more positive outcomes such as feedback from enjoying success and having a positive outlook. Through this positive reinforcement the growth of learned optimism becomes prevalent and then begins to have a reinforcing effect back on the individual.

*“There’s also this feedback where enjoying success can help to build resiliency and a positive outlook, and as individuals go further on the importance of having built those character strengths—the resiliency and the learned optimism—those things reap continued rewards.” (E)*

Individual learning styles

The experts highlighted how dyslexic individuals tend to be able to develop techniques of flexible coping strategies as a result of their weaknesses. Through their coping against weaknesses, they noticed how certain learning and coping strategies had emerged and been developed and, as a result of this, certain working preferences were also noticeable. Much of this experience was then thought to be gained ‘on the job’ to cope within the workplace and to prevent themselves from falling into difficulty easily.

*“You have used an important word there which is ‘individual’ we are looking at individuals their own style their own profile of strengths and weaknesses and their own working and learning preferences and this is what we have to understand more about is these own working preferences.” (F)*

Increasing levels of social interaction with others was also described as a key feature amongst some individuals with dyslexia that the experts had come into contact with. Becoming social learners and gaining knowledge and experience through their interaction with others was highlighted as a major advantage for dyslexic individuals.

*“And also one of the other strengths is that they need to discuss because I may be inclined to look into a problem go into a cafe and solve it, they need to talk about it and solve it and finding opportunities for relating and socialising with others. The social integration they are so much better at and leads them better learning. They are social learners” (F)*

#### Cognitive strengths

The Big-picture approach

The big-picture approach was a major theme, as highlighted in the interviews with high-achievers in the first part of this study. When asked about the strengths of dyslexia and when describing them, almost all of the experts described the concept of big-picture thinking. On closer examination of this, it was further described in the context of other traits, such as lateral thinking and divergent thinking.

*“So the kind of, in the general dyslexic world, the perception of the strengths would be around things like creativity, problem solving, thinking outside of the box, coming out with lateral thinking, divergent thinking, being very adaptable, being very resilient. Vulnerability is sometimes given as a strength and ability to empathise with others.” (B)*

This, as a cognitive strength, was described in terms of the ability to make connections and links to see how something can fit within a larger model.

*“But also in general terms, functionally in brain terms and also cognitively, it seems to me that often dyslexics have the ability to make connections and make links and see how things can fit within a larger model and to have this sort of gestalt view see where all the connections and missing parts are. This can be very useful of course say if you for example are working with a national policy or research.” (B)*

Experts also reiterated, in parts, that the concept of the big-picture approach is still being further understood and that more research needs to be carried out in order to ascertain a method for understanding the big-picture approach as a definite characteristic. However, it was strongly agreed by the dyslexic high-achievers that they felt this was a strength inherent to the way their brain works.

*“And it became obvious to us that when we were looking at these kids we weren’t looking at kids with a learning disorder simply; we were looking at kids whose brains had been programmed to do something different.” (E)*

Innovation given opportunities for creativity

The concept of creativity was mentioned a number of times by the experts. In many instances, they noted how creativity was also linked to problem-solving, where it involved the recognition of patterns of information and how creativity plays a role in coming up with new ways of doing things; particularly where there is a common association between difficulty and using one’s creativity to deal with a certain situation.

*“It is essential to be in a job which matches with their creativities, it maintains their concentration levels.” (A)*

This was in close association with the themes extracted through interviews with high-achievers, who also mentioned how individuals were able to be more innovative when given opportunities at work to do things slightly differently in order to enhance their capabilities to be more creative.

Visuo-spatial skills

In the distinction between talents and strengths, another aspect was the ability to reason about the physical characteristics of objects through spatial reasoning. This was described by a number of the experts which, again, was similar to that highlighted by the dyslexic high-achievers. In particular the ability towards 3D visualisation and its connection with reasoning in architecture, engineering and creative arts as highlighted.

*“I have always been aware of the visuo-spatial strengths. When I got more into this investigation and looked more into the literature, everyone was talking about the reading problems. But I knew that there were other things, especially in looking at the strengths and not just about improving the reading.” (C)*

However other experts did express their concern for this to be taken as a talent that can be applied to all individuals with dyslexia and that such a skill needs to be argued in terms of *relative* strengths, in relation to spatial versus verbal abilities. The claim that this is an *absolute* strength compared to the general population, was not mentioned.

*“We came up with these different but somewhat overlapping areas of talent clusters and that was really the origin of the MIND strengths concept: 3D spatial or “material” reasoning; the ability to make important connections; the bias to thinking and reasoning in narrative or episodic memory formats; and the predictive power to see where things were heading through mental simulation.” (E)*

Enhanced visual thinking and memory was described by the experts as a particular coping strategy to deal with large amounts of information which a dyslexic individual may be encountering at any one time.

*“They think visually, for example when I’m doing testing with them for example short term memory tests and I give them numbers to remember and then they have to say them back to me, some day that they just had to think of the number in their head and someone traces numbers in the air, they have a different way of thinking and processing. Visual skills seem to be the top one.” (F)*

Developing these various ways of thinking and processing was a particular important element for retaining information and also sometimes in the form of novel techniques, such as video processing in order to remember certain facts on the job.

*“But some dyslexics for example have phenomenal picture memories, or what you call video memories, where they make a video of what is happening.” (B)*

Enhanced capabilities in visuo-spatial skills were also highlighted as a requisite for the pursuit of entrepreneurial business ventures and also how these capabilities are sought after in the ever-evolving workplace.

*“It is the visual and spatial traits -- the envisioning, the integration of complex wholes and related capacities -- that dyslexics seem to have in abundance and also in great variety. Increasingly, these capabilities are becoming sought after -- as more and more organisation heads and employers are coming to realize that machines have already taken over the memory and clerical tasks long thought important. It is remarkable that the same dyslexics who struggle in conventional education are now coming to be seen as having the high-level thinking capabilities that are badly needed for entrepreneurial business or scientific discovery. Of course, there will be many who will continue to thrive in the old system – but over time their successes may prove to promote the long-term failure of their businesses and institutes. ” (C)*

#### Interpersonal strengths

Teamwork

Experts described how dyslexics could contribute to the development of an organisation, as some dyslexics make very effective team builders. It was highlighted that, because of effective skills of communication amongst some dyslexic individuals combined with a tendency for compassion and empathy, they could potentially enable more workers to be productive and be able to build and apply the various strengths of individuals across a team.

*“In the in-depth interviews I carried out, they talked about how they motivated their staff. You could tell that they had empathy with their staff. One of them talked about when one young man who worked for him had worked long hours to get a special contract done, he knew that he loved flash cars so he would make sure the young man could use his car for the weekend in order to stay motivated.”(G)*

Experts described how in their experiences of working with dyslexics, they had found that because dyslexic individuals were so acutely aware of what they themselves would find difficult, they were able to identify in others around them perhaps the same things which they themselves found difficult as well as being able to identify the skills around them. They, therefore, were able to show instances of offering support to others and essentially bring individuals together to form part of a team.

*“So it is about understanding that people work differently and also seeing that there is a spectrum of strengths across a team, therefore you and others are able to benefit from them. I suppose the other thing is that in terms of people skills, It maybe more intuitively good at team building in a sense of the sort of social dimension of it. Because they come from a position of belief that its right to respect every individual in their strengths and weaknesses and to support each other.” (B)*

In instances of working with dyslexic individuals more closely, the experts described how, particularly when they had supported people with dyslexia from a young age they noticed that the difficulties they had experienced, enabled them to ask those around them for help on certain tasks. Teamwork, in this respect, is very closely associated with aspects of delegation. Particularly in business, the ability to call on other peoples skills means that the dyslexic individual is able to work on tasks which are more closely in line with their strengths. Hence, the team is more likely to develop. The high-achievers also noted this as something they strongly perceived to be a strength.

*"If you have already realised that there are things in life that you cannot do and that there are other people who can do better, you go ahead and employ those people who can do those things in your business better and actually leaves you free to do what you need to do, which is to be much more strategic.” (G)*

Empathy

A heightened degree of empathy was also highlighted by several of the experts, which was also consistent with the findings from the interviews with high-achievers. They described how individuals with dyslexia may have heightened degrees of empathy and compassion because of the difficulties that they have previously encountered which in turn gives them insight into how others feel around them.

*“So in the general dyslexic world, the perception of the strengths would be around things like creativity, problem solving, thinking outside of the box, coming out with lateral thinking, divergent thinking, being very adaptable, being very resilient. Vulnerability is sometimes given as a strength and ability to empathise with others.” (B)*

In relation to the skill of empathy, they can, for example become essential in enabling staff to feel motivated and help contribute to the well-being of their fellow colleagues. The experts also described that, because individuals with dyslexia may have, at one time or another, experienced some sort of social injustice as a response to their difficulties, they will then have an awareness that others may experience similar things around them and therefore, through this developed sense of fairness, it will help them to rectify potentially problematic situations within the workplace when they arise.

*“Someone who is dyslexic who has tremendous empathy would be an excellent salesman. What some organisations need is really someone in the office doing the basic clerical work but the trouble is that organisations wont necessarily want to employ two people. What they don’t realise is that that person, if he is playing to those strengths will probably be such a good salesman because you almost have this like overcompensation.” (G)*

*“From having taught dyslexia over the many years, often they have a very developed, ethical perspective and a strong sense of what is fair and what is not fair, which partly may come from a feeling of social injustice, and therefore a wish sort of to put that right.” (B)*

Effective communicators

Effective communication skills were highlighted by the dyslexic experts as a key skill, which the majority of dyslexic individuals whom they had observed had developed as a result overcompensating for their difficulties. In the context of adults with dyslexia moving into business, communication skills were seen as very useful when communicating a vision of a project to others and also in making the choice to employ more people. In particular it was described how the use of good verbal communication skills also linked quite directly to other positive qualities, such as determination, perseverance and resilience.

*"Obviously you know that entrepreneurs need to be very strategic and many of the dyslexics have a very good vision of what needs to happen because of their oral communication skills. As we know though that not everyone who is dyslexic has good communication skills but many have and again that is very useful in the business context.” (G)*

*“Quite often they have good verbal skills. They often have very good social skills, and sometimes they use those to their advantage in order to overcome their difficulties, determination. For those who have succeeded, they have internalised a strong personal and self-belief that what has helped them to keep going.” (C)*

Delegation in business was also linked to the ability to effectively communicate with others.

*“It was the oral communication and the delegation particularly that came out in the interviews and really the fact that they grew their businesses more quickly and they employed more staff so that a much higher percentage of them had a businesses or more.” (G)*

### Theme 3: Consequences of not finding strengths

Instances were described by the experts in which they had not been able to identify and build on the strengths of dyslexics with whom they had worked this. The consequences of which impacted on both the dyslexic’s work and personal life. This included lack of self-esteem and self-belief, experiences of failure, depression and having to dal with the consequences of being in the wrong job or career.

Being in the wrong job is difficult for anybody, but it can present particular difficulties for individuals with dyslexia. The experts articulated the need for sound career guidance for individuals, in order to identify their strengths so that they could make more informed career choices.

*“So finding an area where there is going to be a good fit and where your strengths and talents are going to be appreciated is going to be incredibly important and it’s important for people with dyslexic individuals.” (E)*

*“If they get wrong career advice or no career advice then they may end up in the wrong job and that is a problem. That is what happens when doing the wrong course at school or at college and that is when the problems arise.” (F)*

Participants described how, for dyslexics, there can be a clear feeling of stress when they felt that their potential if going unnoticed and remains untapped. By not fully being aware of what they are able to do, despite their dyslexia, the consequences can be personally very challenging for them. Since dyslexia is generally perceived as a primarily educational problem, due to the heavy focus on the individual’s abilities to learn to read, spell and write.

*“As a dyslexic you are going to have overwhelming feelings of inadequacy at times because there are some people who feel that spelling is important, and it isn’t really, its only about communicating and if you can write down something that people can understand it doesn’t really matter if its not spelt correctly.” (D)*

Dyslexia, however, does not end when school finishes, but continues throughout a person’s life, and dyslexic individuals continue to experience problems, particularly during their work lives. There are large numbers of undiagnosed adult dyslexics who face problems without knowing that they are bright enough to achieve success despite their difficulties. With the many other emotional and social difficulties, which may have accompanied them since school, this makes success even harder to achieve for dyslexics, especially when they are accompanied with various other difficulties.

*“Many leave school with very low self esteem they have probably had a very negative experience so they probably have a lot of baggage and a lot of work to do with themselves.”  (F)*

A key issue that the participants described was that when they felt inadequately understood, they then felt isolated, experienced related stress disorders and suffered with anxiety which subsequently affected family and working life. Many dyslexic individuals may have also decided also to avoid certain areas of work or instead focus upon specific occupations (excluding other possibilities) as a result of their dyslexia.

*“If you are dyslexic its not just simple to say try harder and you will be able to do it, the more stressed you will become then the less likely you will be able to do something which taps into your potential.” (D)*

## Workplace and Dyslexia

Given that this study looks at the perspective of dyslexia strengths in relation to the workplace, some key themes which were seen from the interviews with the experts concerned how dyslexics cope and are perceived in the workplace and how the development of one’s strength can give added benefit not only to the individual dyslexic in question but also to the work environment which they are a part of. The first theme in this category concerned how an individual who has managed to identify and cultivate their strengths is then able to make valuable contributions in order to benefit an organisation.

### Theme 4: Benefit for the individual and the workplace

The experts described how they felt that once strengths were identified, dyslexic adults would in fact be able to make very strong contributions to the workforce providing there was a match of strength and skill to the job in question. Linking directly to the strengths already associated with individuals with who they had been working, , they described for example the ability of some dyslexics, to make connections and to make links between a much larger model, as well as working in teams and having an acute awareness of the importance of empathy when working with others.

In terms of the benefits for the individual, being able to understand what their skills and abilities are help them to become far more efficient workers and to become a key feature of success in the workplace.

*“But just thinking of the small things, being able to do their job, to be feeling different to being able to get on with and know that they a place is a huge thing and not feel like a passenger, it is good for them and its good for the company.” (F)*

Essentially, though the impact being an efficient worker in the workplace has on the individual, there is a mutually reinforcing effect on the organisation or workplace with which they are involved. In relation to the skill of empathy, they can, for example, be essential in enabling staff to feel motivated and can help to contribute to the well-being of their fellow colleagues. The experts also described that because individuals with dyslexia may have, at one time or another, experienced some sort of social injustice as a response to their difficulties, then they will also have an acute awareness of others who experience similar things around them and therefore, through this developed sense of fairness, they will help to rectify potentially problematic situations within the workplace as and when they arise.

*“From having taught dyslexia over the many years, often they have a very developed, ethical perspective and a strong sense of what is fair and what is not fair, which partly may come from a feeling of social injustice, and therefore a wish sort of to put that right.” (B)*

Another benefit that was described which could contribute to the development of an organisation, was the strength of being effective team builders. It was highlighted that because of effective skills of communication amongst some dyslexics combined with a tendency for compassion and empathy, they could potentially enable more productive workers and be able to build and apply the various strengths of individuals across a team.

*“So it is about understanding that people work differently and also seeing that there is a spectrum of strengths across a team, therefore you and others are able to benefit from them. They may be intuitively good at team building, because they come from a position of belief that it’s right to respect every individual in their strengths and weaknesses and to support each other.” (B)*

### Theme 5: Barriers in the workplace for Dyslexics

Experts described what they felt to be some of the barriers faced by dyslexic adults at work, which they may face on a daily basis. Insights into this, as a theme, addressed whether or not dyslexia should be disclosed, how to nurture work environments that recognise strengths, and how to demonstrate and explain a person’s strengths to others.

With regards to the disclosure of dyslexia within the workplace, the experts described the challenges that have been faced by individuals with regards to how potential difficulties they face may be disclosed.

*“But also many people with dyslexia who have made it to the workplace and by definition are therefore successful as opposed to those individuals who have made it to the workplace, have got there by hiding by covering up their dyslexic difficulties. So therefore it goes against the grain to start talking about difficulties.” (B)*

*“Get into the workplace and again you have this problem, they are having to work terribly hard to write a report in the way it needs to be written for example- or you know every time you do an email you are having to check goodness knows how many times because you don’t want people to know that you are dyslexic.” (G)*

The experts also described how the disclosure of some difficulties relating to a person’s dyslexia in the workplace is not always necessary, as many individuals feel that by the time they have moved into work they have since managed to overcome many of their initial weaknesses by utilising the appropriate coping strategies. However, the potential challenge is that once you have understood and are aware of what your strengths are, how does one then go about implementing them within the workplace and articulating them to managers and co-workers, then receiving support?

*“You have for years had people who have managed to hide the fact that they have difficulty with their time keeping and note taking and spelling, reading. How confident now would they feel about declaring those? It’s a very difficult thing to do. So how do you declare strengths without appearing arrogant?” (B)*

One of the other barriers that the experts described as posing a potential challenge for dyslexics in the workplace was in relation to the way in which their strengths may be supported and utilised, even if identified. It was described that a potential challenge at the present time is that support is not only hard to come by in the workplace but, also, that many companiesare failing to adequately support *all* individuals and not just dyslexics.

*“There needs to be more company support but we have also reached this time with the economic downturn, it’s the last thing anybody is thinking about. So that is worrying I think, but I think you know even companies themselves are aware, even the HR departments you need to train people throughout the company and that is certainly not happening.” (G)*

### Theme 6: Gaining experience in the workplace

Experts highlighted how the pursuit of strengths for dyslexic individuals was paramount in enabling them to understand which careers they should be moving into. This was very similar to the insights drawn from the high-achievers in part 1, in which it was articulated that it is difficult to know exactly which careers they should move into immediately and that sometimes, after attempting several lines of work, they were only later able to make much clearer decisions on the kinds of work they felt they were able to persue.

*“It may not be for people that are dyslexic that the straightforward career path is always clear.” (D)*

*“So finding an area where you feel you fit and where your talents are appreciated is going to link to performance more with dyslexic individuals than other individuals.” (E)*

The experts also explicitly stated the necessity for individuals with dyslexia to be appropriately matched to their careers and how through early preparation, perhaps in the transition periods between adolescence and adulthood as well a school and higher education such time gaps may provide practical work experience opportunities which could enable them to gain greater insight into their strengths.

*“So one thing we try to prepare parents for early on is the importance of taking a flexible approach in thinking about making the transition to adulthood or higher education, and possibly the need to make that transition over a longer period of time, or perhaps to interrupt it at some point by getting some practical work experience, or time in the armed services, or some other intervening activity like travel, where kids have the opportunity to gather experience or just to mature in their wiring a little bit more.” (E)*

## Support for Dyslexia

The experts who had been selected for interview all had experience working both with dyslexic children and dyslexic adults. A key feature of the interviews involved looking at the ways in which individuals with dyslexia also needed to be supported, with their own ongoing struggles and challenges, which they faced as a result of their weaknesses but also in relation to the development of their strengths.

### Theme 7: Ongoing Support

Many of the experts described the need for a strong support system to be in place for adults with dyslexia. Having a strong network of family and friends around them was key in many instances of success from dyslexic adults as well as there being an understanding of both weaknesses as well as the strengths of dyslexic individuals strengths helped. Flexibility and encouragement were also articulated as key qualities, which helped dyslexic adults to continue to build on their successes.

The importance of having a support system in place, which involves and engages family members or other individuals who are able to assist in the identification and development of strengths and assists with their difficulties, is highlighted by the experts as being an important aspect for dyslexic individuals.

*“I think that those individuals who have tended to do well have had supportive people or individuals around them which have helped them to succeed but there are other people who are not that fortunate and are not enabled to make full use of their potential.” (B)*

*“You know being able to say that an 8 or 9 year old is showing certain strengths, and these are areas that we can encourage the parents to expose their child too so that they could recognise that they have a particular aptitude for. If you see the talent in that area and if you see that provide some opportunities for that child.” (E)*

*“Now the idea to dyslexics comes very well and naturally to them, and this is mostly because they have felt this from their parents or from someone else.” (B)*

The experts articulated the strengths of dyslexia which they believed was relevant as well as the areas of intrinsic difficulties and associated weaknesses relating to dyslexia.

### Theme 8: Areas of difficulty for dyslexics

There was clear consensus, from across the opinions of the experts on the associated difficulties of individuals with dyslexia with regards to the areas of difficulties associated with dyslexia. References were made to concentration, difficulties with working memory and literacy, and the fear of having a career with a lack of intrinsic reward.

*“Often that child feels very lost and has a very difficult time finding a vision to be able to see something in their future which is motivating and animating enough to help them apply themselves to difficult subjects. It’s almost very hard to cope with those jobs that do not have some intrinsic reward for them.” (E)*

Some of the difficulties described as being associated with dyslexia also included the effective use of time and also organisational skills. These were not necessarily novel insights, but have frequently been mentioned, as also by the high-achievers in the first part of the semi-structured interviews of this study.

*“Just for example remembering lists, remembering phone numbers taking down notes and writing reports here they have to summarise information. Those things are difficult for them.” (F)*

*“Things like taking down notes and writing down things in a meeting, they are not very good at writing notes they need a lot of them. So recording information for example and writing it down afterwards. Lecture notes for example.”   (F)*

*“Difficulty with organisational skills, the literacy difficulties which we know, which in adulthood can be still severe, or at the mild end it could be the speed of working, stress affect, the difficulty to process large amounts of information, or in producing, or producing reports to deadlines. Organisational skills and time management. A difficulty with the perception of time, in respects to an unrealistic expectation of what they can achieve in an hour before something is due in.” (B)*

*“Although he is an incredibly bright person, had been to university- someone who is he is dyslexic has got to read something 4 or 5 times, and so all of that is putting in additional pressure really.” (G)*

## Discussion

Qualitative semi-structured interviews were carried out with experts in the field of dyslexia research and practice. The experts all highlighted their experiences of working with dyslexic individuals over the years and also contributed their own insights into directions for dyslexia strengths research. There were eight themes drawn out from the interviews which were grouped under three broad categories, ‘*strengths of dyslexia’, ‘workplace and dyslexia’ and ‘support for dyslexia’.*  Further literature will be reviewed in the context of the findings.

*Strengths based research needed*

The first theme was identified as ‘strengths based research needed’. The experts described the need for strengths based research within dyslexia. Dyslexia research has been heavily focused on the associated weaknesses of dyslexia. The experts highlighted the requirement for individuals to have an analysis of strengths alongside a diagnosis of dyslexia. This is very significant for dyslexia research as it shows a desire for the positive aspects of dyslexia to be taken into account by those who are at the forefront or research and practice. The area of positive dyslexia was described as a *‘welcome area’* and an approach that they *‘felt very strongly about’.* This was enlightening considering that these participants spend many hours working and interacting with dyslexic individuals, therefore highlighted the consensus on how important it is to be focusing on strengths. The importance of also identifying a match between individual skills and appropriate careers was also highlighted, with an emphasis that it is *‘particularly important for people with dyslexia’*. This is supported particularly through the literature about how diagnosing an individual with dyslexia can lead towards a ‘negative labeling’ of the individual. The problem is highlighted by McLoughlin and Leather (2002), who describe that the problem with labels is that they only refer to one aspect of a person’s life. The fact that dyslexia refers to what people *can’t* do means that there is a risk that what dyslexic people are *able* to do is overlooked. Given that dyslexic experts work with a large representation of dyslexic individuals, the fact that they have highlighted the need for further strengths based research supports the validity for further work in this area as they share the view that this is something which could essentially provide further support for individuals with dyslexia, by focusing on their strengths as opposed to their weaknesses.

*Recognised strengths already seen*

The second theme was termed as ‘recognised strengths already seen’. The experts described the various insights relating to strengths based research. It incorporates various strengths within a work success context, insight into the cognitive strengths they would associate with dyslexia, as well as the relevant interpersonal strengths. The sub-themes within this theme refer to similar findings found within the interviews with high achievers. Specific reference is given to character strengths, the big-picture approach, visuo-spatial strengths, empathy and communication skills.

These were all similar themes to those found within the themes from the high achievers. Positive interpersonal strength traits were highlighted as *“good verbal and social skills”.* Interpersonal traits, such as empathy, were also touched upon, with individuals in the workplace being able to *“benefit from”* the dyslexics in their work who were able to help and motivate their colleagues as well as being able to *“bring together the other members of the team”.* The experts also highlighted how they had observed, within some dyslexics, a strong “*sense of morality”* demonstrated in the workplace, a heightened *“ethical perspective”* as well as a strong sense of *“what is fair and what is not fair”.* This can perhaps partially be explained stemming from feeling a sense of social injustice and therefore being more sensitive and aware of when things were not going so well for other individuals around them. In particular, reference to teamwork was also articulated, stating that ,dyslexic individuals in most cases, *“respect every individual”* and *“support them in their strengths and their weaknesses.”* They are deemed able to do this well as they themselves have understood the importance of working together based upon their own experiences of feeling a lack of support from those around them*.*

In relation to having determination and resilience, experts described how constant experiences of failure in the school system leads to increased levels of determination and resilience in a dyslexic individual:  *“if you have been knocked back so many times you develop resilience as a result of having to bounce back from the failure”.* Cognitive strengths were also mentioned by the experts and described particularly in relation to the *“ability to make connections and make links…see how things fit within a larger model”* as well as *“the ability make connections between things… they have a different way of thinking and processing”.* It was also described that traits like this are ones that could potentially be very valuable to organisations and are needed within “*unconventional work as opposed to everyday conventional careers”.* As part of the aims of this study, I wished to investigate the commonalities between the insights from the high achievers in relation to dyslexia strengths and those of the experts in dyslexia. The strengths found in study 1 were only taken from a small sample of dyslexic individuals. In this study, the dyslexia experts have agreed, at various levels, with the themes found in relation to work, cognitive and interpersonal strengths and have also agreed on their categorisation into a strengths triad. This was significant as the dyslexia experts are able to offer insight in relation to a higher number of dyslexic individuals which thus gives sufficient weighting to the findings from study 1. The one strength, however, which was not so well supported amongst the experts was that of ‘proactivity’ whereas the high achievers all mentioned proactivity as a key strength.

*Consequences of not finding strengths*

As well as mentioning the positive characteristics associated with strengths, which were also empasised by the high-achievers in study 1, the experts also touched upon instances when the strengths were not understood and the subsequent consequences of this for dyslexics. In the third theme, ‘consequences of not finding strengths’, the experts described that a lack of identification of strengths can cause a dyslexic individual to *“end up in the wrong job”* or in the wrong course at university or college. As a result of this the dyslexic individual may experience *“overwhelming feelings of inadequacy”* and experience *“low self-esteem and ultimately depression”.* This theme is particularly supported by the literature. McLoughlin et al (2002) mention how reported affective characteristics experienced by adults, particularly in the workplace include a lack of confidence, low self-esteem, anger and frustration as well as anxiety. Wolf (2008) quotes a statement from a speech made by former world champion racing driver Jackie Stewart, in which he stated: *“you will never understand what it feels like to be dyslexic. You will never understand what it feels like to be humiliated your entire childhood and taught every day to believe that you will never succeed at anything”.* Clearly, experiences such as this can also be seen in the prison system, whereby high levels of unemployment and ultimately crime amongst dyslexics are a major consequence of not enabling individuals to due to a lack of understand what their strengths are and due to a a lack of understanding of how they can channel their skills and abilities effectively ([Hewitt-Main, 2012](#_ENREF_56)).

*Benefit for the individual and the workplace*

The fourth theme concerns the ‘benefit for the individual and the workplace’. Insights were drawn out relating to how, if a dyslexic individual adequately has their strengths and abilities assessed, they can then go into the workplace and how, subsequently the workplace can also begin to benefit from them. The participants described how the strengths of the individual, if they *“were properly identified and channeled”,* would create benefits for entire workforces. Through the proper utilisation of the skills and talents of highly creative as well as skilled dyslexics in other areas, they could become driving forces of success within workplaces. This aspect could then be followed up in further research, as much of the support of this theme is anecdotal. Understanding the levels of *how* successful dyslexics actually are making groundbreaking contributions to the organisations in which they are working and how much of this they attribute to their dyslexia.

*Barriers in the workplace for dyslexics*

The fifth theme was entitled ‘barriers in the workplace for dyslexics’. This theme relates to the way in which experts describe, through their experiences of working with a large range of dyslexic individuals, the challenges of dyslexics within the workplace. It encompasses insights into how dyslexic individuals perceive their barriers within the workplace. One of the main barriers described by the experts concerned the issue of *“disclosure of their dyslexia to colleagues and bosses”.* To access resources and assess adjustments in work, an individual must disclose that they are dyslexic. Research has revealed that many are reluctant to do so, fearing discrimination (Gerber & Price 2003). Some of the reasons provided, reflect much misunderstanding surrounding dyslexia, both in terms of dominant stereotypes held by non-dyslexic people as well as the lack of understanding that dyslexic people have of themselves. The experts described how in many cases those who have made it through to the workplace, in many instances, have *“got there by hiding and covering up their dyslexic difficulties”* and have had to *“hide the fact that they have difficulty with time keeping, note-taking and spelling”.* Therefore, being able to understand their strengths better and work towards them would enable dyslexic adults to be at a much greater advantage*.* Emphasis was placed on the importance of giving more support to dyslexics in the workplace however reference was also made to the potential challenges of this, particularly given the current financial climate and the cutbacks occurring in many businesses and organisations. The investment of time and resources of companies to enable dyslexics to progress is, in the near future a relatively unlikely priority. This would be another interesting theme to follow up on in further research.

*Gaining experience*

The sixth theme was entitled ‘gaining experience’. Experts mention how weaknesses when supplemented with valid experiences lead to the proper cultivation of strengths. Experts described how the career path for dyslexics is not always *“straightforward and clear”.* Dyslexic individuals may not be able to immediately find a career path which suits them hence therefore they may require more support when transitioning from different stages, particularly out of education and into the workplace. The importance of gaining experience therefore through lines of work or through other forces of activity would prove very helpful in helping them understand better what their strengths were so that they could make better and more informed career choices. The importance of having experience can lead towards a better fit with ones job and future career. ‘Goodness of fit’ should therefore be considered as a potential factor within the motivations for gaining more experience. Gerber and his colleagues (1992) found this to be a factor in the success of dyslexic people. The dyslexic high achievers also highlighted the use of having and finding opportunities for experience and the extent to which it contributes to the development of strengths.

*Ongoing support*

The seventh theme ‘ongoing support’, was referred to by the experts as the systems that are and should be in place for dyslexic individuals following on from assessment and continuing through life. Particular instances observed that dyslexic individuals *“tended to do well”* when they had had supportive people or individuals around them who had “*helped them to succeed* ” and that those who were less fortunate had not been enabled to make full use of their potential. Many educationalists and researchers have acknowledged the serious emotional consequences that dyslexia can have for some children and adults, especially when it is unrecognized and supported. It should be emphasised that it is not just specific however to dyslexics that many individuals with a wide range of special needs are at risk of low self-esteem and personal distress. Both personal reports and evidence from researchers (Fawcett and Nicolson, 2004) strongly suggest that a major factor is lack of identification and support, particularly when this leads to inaccurate and negative views of the individual concerned. A further aspect of ongoing support, which was highlighted as a potential area of exploration, is through coaching. Individuals with dyslexia will have most likely have developed their own ways of working, be they effective or ineffective, and the use of a coach should aim to refine and enhance the working and learning strategies which they employ.

*Areas of difficulty for dyslexics*

The eighth theme was ‘areas of difficulty for dyslexics’. Here the experts described associated difficulties for individuals with dyslexia citing “*poor organisational skills”, “poor note-taking”* and *“struggling with time management”* as the most common traits in relation to difficulties experienced within the workplace. This theme recurred throughout all of the interviews with the experts, particularly in relation to the barriers of investigating strengths, mainly due to the focus on the remediation of weaknesses. These associated difficulties were all noted as factors that can also lead towards stress and anxiety for dyslexics. They also described how the production of reports for deadlines within work were all key factors which places added pressure on dyslexics in the workplace, with the repercussions sometimes resulting in unemployment or excuses for refusing to offer promotions to employees. These were also noted in the interviews with high achievers, who all mentioned some of the challenges and difficulties they experienced with dyslexia.

Common themes in relation to dyslexic high achievers

Table 10 shows the relationship between the themes found in the interviews with dyslexic high achievers and the with the experts in dyslexia in relation to the 3 - domain strengths taxonomy highlighted in study 1. Interestingly, all the experts highlighted that dyslexics, from their experience, all had abilities in the arena of interpersonal social strengths, particularly in relation to communication skills. However there was less consensuses around the theme of ‘proactivity’, which was not as well supported as a major dyslexic strength by the experts compared to the dyslexic high achievers. The interpersonal theme of empathy was also highly supported as a strength of dyslexia by both groups.

**Table 5.1: Perspective of Experts in relation to themes found with the High Achievers**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Work/Adults** | | | **Cognitive** | | | **Social** | |
|  |  | **David McLoughlin** | **Carol Leather** | **Julie Logan** | **Brock Eide** | **Tom West** | **Angela Fawcett** | **Gavin Reid** | **Kate Saunders** |
| **Work Strengths** | Determination/Resilience | X |  | X |  |  | X | X | X |
| Proactivity |  |  | X |  |  | X |  |  |
| Flexible Coping Strategy | X | X | X | X |  | X | X | X |
| **Cognitive Strengths** | Big-picture |  | X | X | X | X | X | X | X |
| Visuo-spatial skill |  |  |  | X | X |  | X | X |
| Innovation given opportunities for Creativity | X | X |  | X | X | X | X | X |
| **Interpersonal Social Strengths** | Empathy | X | X |  | X | X | X | X | X |
| Teamwork | X | X | X | X |  |  | X |  |
| Communication | X | X | X | X | X | X | X | X |

## Limitations

One of the limitations of study 2 (as with study 1) was that these interviews were conducted in the style of a self-report, with no objective quantitative analysis. I aim to address this issue in study 3.

The second limitation was that the ‘experts’ interviewed about dyslexia strengths all came from varying disciplines within dyslexia research and practice, with some of the experts being focused more on the research aspect, while others were focused more on dyslexia assessment and support. Though all of the experts work with large numbers of dyslexic individuals, further study and a larger sample size of participants could have allowed for a better representation of people working with dyslexic individuals, such as teachers, and also more individuals from within dyslexia research and practice.

Further limitations include a lack of interaction between the interviewer and the participants due to some of the interviews having to be conducted over Skype, which created a potential loss of communication and reduced the ability to naturally prompt when questions were being asked.

## Conclusion

The purpose of the second study was to gain an understanding into the perspective of strengths from the point of view of dyslexia experts who have the advantage of working with a broad range of the dyslexic population through their work and expertise. The interview schedule was still based around the concepts used in the first stage of interviews with the high achievers, however they were viewed from the perspective of non-dyslexics (in most cases) on dyslexic strengths. The insights were developed through themes based on the general focus and recasting of dyslexia from the perspective of strengths based research, as well as support for dyslexia strengths to be categorised in terms of a ‘3 domain’ strengths taxonomy.

The experts recognised a vital need for dyslexia strengths research and the essential nature of a strengths approach when researched properly and applied to the lives of dyslexia adults. The insights gained from these interviews provided a blueprint on how to potentially approach the next study using quantitative analysis and further exploration of dyslexia strengths in younger dyslexic adults. Every expert interviewed concluded and agreed upon the need for a positive approach to dyslexia and all displayed a personal interest in seeing it move forward.

## Reflection on the Interview Process

Overall, the collection of the data was a lengthy process. Because the participants were located across varying distance (in the case of the experts abroad), the collection of data took a significant amount of time commencing February 2011 and continuing until the final participants interviewed in March 2013. The duration of each interview was about one hour long on average, each interview of which required transcribing. However, the experience overall was successful and very enjoyable. For those participants who lived abroad, the interviews were conducted over Skype. Obviously, this presented me with certain practical limitations, such as the interviewer and participant not being able to be in the same room, thus not being able to notice body language and reducing interaction with the participant, which may have meant that the feeling of having a ‘conversation’ was lost. Successes of the interview include the level of understanding and insight gained by the interviewer from one interview to the other. This lent itself to an enjoyable process of analysis, which enabled me to interact once again with the transcript and practice interpreting the subjective experience of the individual. The depth of insight would not have been achieved with a quantitative methodology. Therefore, despite its challenges, I feel that conducting qualitative research using interviews enabled me to engage in this level of interaction with sufficient depth, with both the dyslexic high achievers and the experts in dyslexia.

## Implications for Further Work

Overall, the interview process across both study 1 and study 2 created a great deal of insight into the strengths of dyslexia from the viewpoint of both the dyslexic high achievers and the experts. Many of the themes corroborated with previous research on dyslexia strengths, with the reiteration of certain themes and categorisation of strengths into categories such as interpersonal, work and cognitive strengths. The findings provide a stepping-stone for further research in the form of quantitative analysis, with greater exploration of these strengths amongst younger individuals in the university setting and specifically about how cognitive and interpersonal strengths are represented within the student population, not just in dyslexics, but within other student groups who may be specialized in particular strengths and enabling comparison of the variations between different groups.

The rationale for carrying out a quantitative study following on from a qualitative is that positive dyslexia is a new area that we are exploring. This is the first time we have conducted such research and combining the methodologies together allows the research to be exploratory in its design. In by no means is it to make hard and fast rules that this study is generalisable- on the contrary we do not believe that the findings in study one are necessarily present within all successful dyslexic individuals never mind just dyslexics overall.

# CHAPTER 6: Study 3: Strengths of Dyslexia in the Student Population

## Introduction

Study 1 and 2 of this research aimed to investigate and characterise adult strengths in dyslexia. Strengths were then categorised into a three-domain taxonomy: Work Strengths, Cognitive Strengths and Interpersonal Strengths. Following an exploratory sequential design, the third study is designed to address three issues emerging from the first two studies; first development of quantitative measures through the development of an instrument to measure the strengths identified in studies 1 and 2; second, testing of younger adults (students rather than work professionals) to assess which skills might be self-selecting for success and which might develop through experience; and third to assess the specificity of the strengths triads of dyslexia by including non-dyslexic student groups that were expected to show strengths in each area. Three student groups were used for this comparison; Management students to compare entrepreneurial traits and behaviours, Psychology students to compare levels of empathy, and Architecture students to compare degrees of visuo-spatial ability. A comprehensive test battery was developed based of the themes generated from the first two studies using where available existing tools together with direct assessment of interpersonal and cognitive strengths. Student groups were also assessed on Holland’s Occupational Types (1973) in order to investigate job typologies of dyslexic individuals. The rationale behind using these tools will be covered in the introduction to this study.

## Rationale

As mentioned in the previous chapters, my research is following an exploratory sequential design, whereby research is carried out in two distinctive phases. As the researcher I started by qualitatively exploring the topic of dyslexic strengths in successful adults, before building towards a second quantitative phase. This emphasis on exploration is reflected in the design name. For this phase of the research I will develop an instrument as an intermediate step between the phases that builds upon the qualitative results and is used in subsequent data collection. For this reason, this design has been referred to as an instrument development design ([Creswell, Fetters, & Ivankova, 2004](#_ENREF_20)) namely called a Dyslexia Strengths Finder.

As highlighted in the literature review of this thesis, the literature is sparse in relation to dyslexia careers, and particularly in relation to how younger dyslexic adults are able to choose careers based on their strengths. In order to address this, as well as the other issues mentioned in the above introduction I decided to undertake a study which would be aimed at a younger age group of dyslexic individuals to assess how they were able to evaluate their strengths and begin to assess which skills might be self-selecting for success and which might develop through experience. As mentioned in the introduction, students were recruited from Architecture, Management and Psychology departments at the University of Sheffield in order to test them as specialist groups against the dyslexics. Since this tool was being developed to potentially explore how dyslexic students could develop their skills and strengths in order to move into suitable careers I needed to include aspects of job typology. Because these students were not yet in the workplace we had an opportunity to find ways to try and match the students to potential careers. An identification of a suitable established tool to address matching personalities with suitable careers therefore also was essential. Details of how this was chosen are explained in the literature review below.

## Development of quantitative measure of strengths

Strengths from the first two studies, which were the subject of further investigation, included the strengths triads of Work, Cognitive and Interpersonal Strengths. Where available, established quantitative measures were selected. For the Cognitive and Interpersonal Strengths we did not use established scales because at the moment there are no validated scales for the *big-picture approach* and *visuo-spatial skills*. We therefore asked simple questions relating to these, which composed of only a few items. For work strengths I used the established scales for Resilience, Self-efficacy, Personal Initiative and for Entrepreneurship as described below.

### Resilience ([Stephens, Heaphy, Carmeli, Spreitzer, & Dutton, 2013](#_ENREF_117))

Resilience was noted as a strength forming part of the Work Strengths triad in the first two studies. It refers to the ability of individuals, groups and organisations to absorb the stress that arises from challenges and adversity on a daily basis. In the context of dyslexia, successful adult dyslexics described that facing challenges in response to their dyslexia had contributed to them developing a sense of resilience, which they felt able to apply to their work environment. Within work psychology the concept of resilience is the capacity to bounce back from adversity, which is fundamental to human and organisational survival. Resilience has been explored through a number or studies which point to the role of the relationships in which individuals and groups are involved. Researchers have explored for example how individuals at work respond with resilience for example, when faced with distress such as job loss ([Gittell, Cameron, Lim, & Rivas, 2006](#_ENREF_46)) or the processes responsible for their responses to adversity ([Caza & Milton, 2012](#_ENREF_14) ). Research has also been focused at the organisational level as well as exploration of the enabling factors of resilience for individuals including interpersonal strengths such as how to interact with others and connect with them in the face of adversity. Resilience was measured using five items of the scale developed and used in previous studies ([Wagnild & Young, 1993](#_ENREF_125)). Sample items include “I bounce back when I confront setbacks at work”. The reliability of this scale was α = .87.

### Self-efficacy ([Schwarzer & Jerusalem, 1995](#_ENREF_101))

Dyslexic high achievers noted in relation to resilience how they have developed certain coping mechanisms which allows them to adapt to situations where their dyslexia has become a barrier to their progress. Bandura (1977) states self-efficacy as the extent to which a person believes they are capable of performing the behaviour required in any given situation. The construct of perceived self-efficacy reflects an optimistic self-belief. This is the belief that one can perform novel or difficult tasks, or cope with adversity in various domains of human functioning.  Perceived self-efficacy facilitates goal-setting, effort investment, persistence in face of barriers and recovery from setbacks. It can be regarded as a positive resistance resource factor. A scale was taken from [Schwarzer and Jerusalem (1995](#_ENREF_101)) ‘Generalised self-efficacy scale’. The scale was created to assess “*a general sense of perceived self-efficacy with the aim in mind to predict coping with daily hassles as well as adaptation after experiencing all kinds of stressful life events”.* Sample items include “When I am confronted with a problem, I can usually find several solutions.” In samples from 23 nations, Cronbach’s alphas ranged from α =.76 to .90, with the majority in the high .80s.

### Personal Initiative ([Frese, Fay, Hillburger, Leng, & Tag, 1997](#_ENREF_37))

The dyslexic high achievers highlighted how proactivity and working to achieve goals was what enabled them to be successful in their lines of work despite their difficulties. What we were interested to see however was if personal initiative towards ones goals is an inherent trait developed from years of experiencing difficulties a dyslexic, or if this was developed through experience in the work environment. Proactivity means to have a long-term focus and not to wait until one must respond to a demand. The long-term focus on work enables the individual to consider things to come (new demands, emerging opportunities) and to do something proactively about them. Thus problems and opportunities are anticipated, and the person prepares to deal with them immediately. The scale taken to measure personal initiative was taken from [Frese et al. (1997](#_ENREF_37)). It was developed for the study on self-reported initiative with an alpha score of .83.

### Entrepreneurship

As part of the three issues that this study seeks to address is how to assess the specificity of aspects of the Strengths triad of dyslexia by including non-dyslexic student groups that were expected to show strengths in each areas. The Cognitive strength of Visuo-spatial skills was compared with Architecture, which does not have a validated established scale and Interpersonal strength of Empathy also didn't have a validated scale. For these items questions were put asked which sought to tap into these items. Entrepreneurship ability is not apart of the Strengths triad, however certainly aspects of entrepreneurship do however relate to Interpersonal strengths such as teamwork and communication skills which do form part of the triad. As highlighted earlier in Chapter 2, it is thought that entrepreneurship is commonly linked with dyslexia, with suggestions that there are some traits of both dyslexia and entrepreneurship that may overlap. Entrepreneurial intention is defined as the conscious state of mind that precedes action and directs attention toward a goal such as starting a new business ([Bird, 1988](#_ENREF_9); [Krueger & Carsrud, 1993](#_ENREF_64)). To measure Entrepreneurship we used the Entrepreneurship Intention Questionnaire (EIQ), which was originally developed in Spain by [Moriano (2005](#_ENREF_76)), The Cronbach’s alpha reliability of the EIQ subscales in previous research ranged from .76 to .87 in Spanish sample of 281 students. All items in the questionnaire were measured on a 7-point Likert-type scale (from 1 to 7). Students will be compared with Management students who may show signs of entrepreneurial tendencies due to the nature of the course which they are studying.

## University Students and Career Choice

The question to be asked is how do individuals with dyslexia succeed in challenging careers. There is increasing research on adults with dyslexia but little about how they manage to move into careers based on interests and skills they possess. By looking at the university students then we can understand the perceptions of younger dyslexic adults pre-career and how they understand their strengths. Career choice for dyslexic younger adults therefore is an area which needs further exploration which is what this third study seeks to explore further. As well as exploring the strengths of dyslexia as highlighted in the first two studies, types of careers suited to individuals with dyslexia were also explored to investigate indicators of careers choice while at University.

Many of the dictionary definitions tend to focus on the idea that a career necessarily means progression to something better, and/or working in an occupation with high skill and status. This notion of career is often contrasted with that of a ‘job’, which is considered to have neither of those characteristics. [Arnold, Randall, and Robertson (2010](#_ENREF_4)) consider a career as “The sequence of employment- related positions, roles, activities and experiences encountered by a person”.

Psychological approaches to the study of careers have historically been largely concerned with two themes, namely career choice and life-span development. Content approaches to career-decision making originates in counseling and psychometric practice. It seeks to classify and measure typical patterns of occupational interest, especially in adolescence, and relate these to particular career choices**.** Process approaches, on the other hand, are concerned with explaining how choices are made and the factors that may bias or influence choice. Content approaches have predominated until recently, given that process analysis has recently become more popular, largely under the influence of the contextual changes. The ‘content’ approach to career choice takes the position that psychological profile is a prime determinant of choice. This view has spawned a rich array of psychometric tools, such as occupational interest aptitude and attainment measures. These have been used in vocational choice guidance practice to help individuals make informed choices on the basis of self-knowledge, and in employment to help managers identify appropriate candidates for positions. They have proved powerful and enduring tools for these purposes, but have contributed relatively little to the more general understanding of careers; for example the tools from the work by Holland, whose work remains among the most cited and replicated in the literature.

### Holland- Occupational Types

Arguably the most highly used method of classifying occupations is Holland’s classification of occupational codes, developed in the 1980s, which has now been made into the core component of the free, comprehensive and continually updated O\*Net career choice website for job choice in the USA. An example of the Holland Occupational Types was taken from the Psychology Student Employability Guide by Caprice Lantz (2008) which was adapted into a series of formulated questions and preferences. Over the course of many years, [Holland (1973](#_ENREF_58)) influential theory about career choice, discerned six types of vocational personality, comprising of *Realistic, Investigative, Artistic, Social, Enterprising, and Conventional* personalities*.*  Holland proposed that these types of personality can be arranged into a hexagon shape, in the order described. This order is usually referred to as ‘RIASEC’. Each personality type is placed at a corner of the hexagon as shown below.

**Figure 6.1: Holland’s Occupational Types**

Realistic

Artistic

Investigative

Social

Enterprising

Conventional

The hexagon is used to get people to rate themselves in terms of the ‘types’. Suitable careers are then linked to whatever theme-pair the individual scores themselves as. Those types on opposite corners of the hexagon (i.e. three corners apart) are ‘opposite’ sides. The types on the adjacent corners (e.g. *Realistic and Conventional)* are regarded as relatively similar to each other. Of Holland’s main theoretical propositions, he finds that people find their environments satisfying when such environmental patterns resemble their own personality patterns. When both are aligned, often referred to as *congruence,* it encourages stability of behaviour due to the fact that people receive a lot of reinforcement of their already preferred styles ([Arnold, 2004](#_ENREF_3)). Congruence also tends to enable a person to generally perform well in their work. A person may seek a more congruent environment, remake the present one, or change to become more congruent in their behaviour and/or perceptions. An environment can expel incongruent people, seek newer congruent individuals or change its demands on inhabitants. This fundamental hypothesis is straightforward and states that people will be most satisfied, and ultimately most successful, when working in occupations that are congruent with (i.e match) their personality. Holland’s theory thus reflects a well-established tradition in Work Psychology: the matching of particular personalities and work, with the assumption that both are fairly stable over time.

There is extensive data on the representation of different careers in terms of the hexagon, and this therefore provides a valuable initial way of coding careers. Each of the Holland ‘types’ (RIASEC) are listed below:

R) Realistic types are ‘Doers’, who prefer to deal with things, and tend to be frank, practical, focused, mechanical, determined, or rugged.

*Examples include: manipulating tools, doing mechanical or manual tasks, or doing athletic activities.*

I) Investigative types [Thinkers] prefer to deal with Things and Ideas and tend to be analytical, intellectual, reserved, independent, and scholarly.

*Examples include working with abstract ideas and intellectual problems.*

A) Artistic types [Creators] prefer to deal with Ideas and People and tend to be complicated, original, impulsive, independent, expressive, and creative.

*Examples include: using imagination and feelings in creative expression.*

S) Social types [Helpers] prefer to deal with People and tend to be helping, informing, teaching, inspiring, counselling, and serving.

*Examples include: interacting with people and concerned with the welfare of people.*

E) Enterprising types [Persuaders] prefer to deal with Data and People and tend to be persuasive, energetic, sociable, adventurous, ambitious, and risk-taking.

*Examples include: leading, managing, and organising.*

C) Conventional types [Organisers] prefer to deal with Data and Things and tend to be careful, conforming, conservative, conscientious, self-controlled, and structured.

*Examples include: ordering activities and paying attention to details*

([Holland, 1996](#_ENREF_59)).

What is interesting about the Holland test is that it serves as a measure of comparison in job preferences between dyslexic students and non-dyslexic students. It would give us an indication as to what kinds of vocational typologies are held by the dyslexic students, particularly in relation to other students at the University. Therefore investigating the Holland types would be another aspect of the development of the questionnaire.

## Aims and Objectives

1. To undertake a quantitative investigation across dyslexic students in the ‘Big-5’ strengths (Communication excluded in this questionnaire), Big Picture approach, Empathy, Visuo-spatial skills, Teamwork, Innovation given opportunities for creativity
2. To compare dyslexic students with non-dyslexic students on *Resilience, Personal Initiative* and *Self-Efficacy*
3. To compare Dyslexics against specialist student groups for Visuo-spatial skills, Empathy and Entrepreneurship to see if there are any significant differences between the groups
4. To undertake an exploration of Holland types between Dyslexic and non-dyslexic students to investigate the types of careers suited to various groups

## Developing the Hypothesis

The data from study 1 were derived from successful dyslexic adults. One of the key questions is to what extent is this data characteristic of dyslexic people in general and to what extent do they actually reflect the abilities of any dyslexic adult?

Considering the cognitive skills triad, there is as discussed in chapter 2, considerable individual evidence that some individuals with dyslexia do tend to show skills in each one of these areas. But how representative are these of dyslexic adults in general and are they career specific. Turning to the social skills is it just turning to those dyslexic adults who had had these high social skills were the ones who were successful?

Turning to the work skills, and clearly many of these skills do appear to be successful adults in a career- are they specific to dyslexia? This is particular stringent test that can be applied by examining dyslexic individuals before they get into a career.

Having a wider sample is also important, another issue I wish to investigate was; to what extent do the results that I found from the case studies representative in a wider sample?

## Hypotheses

1. *The Big 5 (Cognitive and Interpersonal strength triads): Dyslexic students show perceived strengths on the Big-5 compared to the non-dyslexic students.*

The Big-5 strengths are associated with dyslexia (Cognitive: *Visuo-spatial skills, Big-picture approach, Innovation*, Interpersonal: *Teamwork and Empathy*). It is predicted that the dyslexic students show self perceived strengths on all of the big-5 compared to the non dyslexic students.

The null hypothesis holds that there will be no relationship between dyslexic students and self-perceived strength across the big-5.

1. *Dyslexic students will give higher ratings for empathy than the management and architecture students but not the psychology students*

Dyslexics are thought to excel on the interpersonal strength of Empathy. Therefore they were compared against psychology students at the University of Sheffield who are thought to also excel at this skill. Comparisons were made with management students and architecture students who were thought to excel at strengths other than Empathy. We expect that dyslexic students will rate similarly to the psychology students.

The null hypothesis holds that dyslexic and psychology students will not give higher ratings on visuo-spatial abilities than architecture and management students.

1. *Dyslexic students will give higher ratings for visuo-spatial ability than the management and psychology students but not for architecture students*

Dyslexics are thought to excel on the cognitive strength of visuo-spatial ability. Therefore they were compared against architecture students at the University of Sheffield who are thought to also excel at this skill. Comparisons were made with management students and psychology students who were thought to excel at strengths other than visuo-spatial skill. We expect that dyslexic students will rate similarly to the architecture students.

The null hypothesis holds that dyslexic and architecture students will not give higher ratings on visuo-spatial abilities than psychology and management students.

1. *Dyslexic students will give higher ratings for entrepreneurial tendencies than the architecture and psychology students but not the management students*

Dyslexics are thought to have entrepreneurial tendencies. Therefore they were compared against management students at the University of Sheffield who are thought to also excel on these behaviours. Comparisons were made with architecture students and psychology students who were thought to excel at strengths other than entrepreneurial behaviours. We expect that dyslexic students will rate similarly to the management students.

The null hypothesis holds that dyslexic and management students will not give higher ratings on entrepreneurial tendencies than psychology and architecture students.

1. *Dyslexic students show higher levels of resilience than other student groups*

Because of the associated weaknesses with dyslexia it was expected that as a result of overcoming these difficulties, the dyslexic students will have had developed levels of resilience compared to their peers. This is because they have had to overcome obstacles and face challenges and the find skill in being able to bounce back from these setbacks. This was also a strength highlighted in the interviews with the high achievers and thus investigated in the younger dyslexic adults and particularly during University years.

The null hypothesis holds that there will be no relationship between levels of resilience in dyslexic students with other student groups.

1. *Dyslexic students show higher levels of self-efficacy than other student groups*

Because of the associated weaknesses with dyslexia it was expected that as a result of overcoming these difficulties, the dyslexic students will have had developed certain coping mechanisms in order to cope with the weaknesses and difficulties they had. This was also a strength highlighted in the interviews with the high achievers and thus investigated in the younger dyslexic adults and particularly during University years.

The null hypothesis holds that there will be no relationship between levels of self-efficacy in dyslexic students with other student groups

1. *Dyslexic students show higher levels of personal initiative then other student groups*

Because of the associated weaknesses with dyslexia it was expected that as a result of overcoming these difficulties, the dyslexic students will have found ways to achieve their goals in novel and creative ways, thus by showing indications of proactivity. This was also a strength highlighted in the interviews with the high achievers and thus investigated in the younger dyslexic adults and particularly during University years.

The null hypothesis holds that there will be no relationship between levels of personal initiative in dyslexic students with other student groups

1. *Holland Types: Compared with Psychologists, dyslexic students will show higher Holland scores of Artistic and Social.*

The null hypothesis holds that there will be that dyslexics will show similar Holland types to Psychologists

1. *Holland Types: Compared with the Management students, dyslexic students show higher Holland types of Artistic and Social*

The null hypothesis holds that dyslexics will show similar Holland types to Management students

1. *Holland Types: Compared with the Architecture students, dyslexic students will show a higher Holland score for the Social typology.*

The null hypothesis holds that dyslexics will show a top self-scored Holland type of Social compared to all other student groups

1. *Holland Types: Dyslexic students will show lower preference for Realistic and lower preference for Conventional Holland types than all three groups*

The null hypothesis holds that dyslexics will show Holland types of Realistic and Conventional compared to all other student groups

## Methodology

### Feedback from pilot of the questionnaire

In order to better understand how viable this questionnaire was and to get advice on how it was put together the questionnaire was sent to some of the experts in dyslexia to whom I had interviewed as part of Study 2. The feedback from these experts was that the questionnaire was very comprehensive, if anything though a little long. It was suggested that it was considerably cut down to a more appropriate length in order for it to be completed in an adequate amount of time. The original version contained all the items in all the scales above consequently there was some repetition of items.

The dyslexic high-achievers who took part in the first study also completed the questionnaire. They also showed similar thoughts to the experts and felt that it was too long, however comprehensive.

### Ethical Approval

This study was approved by the University of Sheffield Psychology Department Ethics Committee. All participants signed consent forms before questionnaires were carried out, and were informed of the right to withdraw at any point during the study. The participant’s names were coded for confidentiality and only myself and supervisor had access to the data.

### Distribution

At the beginning of this study, I recruited students with dyslexia registered at the University of Sheffield to be involved in the study. A letter was sent out through the dyslexia and disability services along with a Consent Form which they were required to either bring with them or sign upon their arrival before commencing with the study. (See Appendix 3 & 4 for letter to participants and consent form). A total of 22 dyslexic students took part in the study, registered across various courses across the University, with no particular groupings on a certain course. All had received a dyslexia assessment at some point in their lives and all were happy to take part in the study, which consisted of a pre-study questionnaire with a combined intervention study.

In addition 54 non-dyslexic students took part between a number of student groups at University of Sheffield. Our target sample group was selected from volunteers of participants from the Architecture (20 students), Management (16 students) and Psychology departments (18 students). The questionnaire was administered directly after a lecture for each group. Each student was asked whether they had ever had a dyslexia assessment. Any participant with a dyslexia assessment was excluded from the study.

The full questionnaire is given in appendix 5.

## Results

As the questionnaire was completed, all data was typed manually onto an excel worksheet. It contained approximately 115 items and therefore needed properly coding and arranging into an appropriate format.

### The ‘Big-5’

**Hypothesis 1**

*The Big 5 (Cognitive and Interpersonal strength triads): Dyslexic students show perceived strengths on the Big-5 compared to non-dyslexic students.*

The figure below shows the mean scores on each of the Big-5 strengths across each student groups. Each individual student group showed relative strength in each of the Big-5. Significance testing was also carried out to explore this hypothesis further (Table 6-2).

*Figure 6-1: Mean scores for Students showing the ‘Big-5’ strengths associated with dyslexia*

As can be seen in figure 6.1 mean scores across all of the Big-5 indicate self-reported strength by the Dyslexics across all of the Big-5 as well as the highest overall combined score on the Big-5. Compared to the specialist student groups dyslexics showed close association with their mean scores. For example, Architecture (green line) students we predicted would have a high score on Visual-spatial skills as well as the Big-picture approach. Dyslexic students (black line) also have a high average score for this as predicted.

A Univariate Analysis of Variance was conducted with the independent variable of student groups with four sub-groups (Dys, Arch, Mgt and Psych) and each of the five dependent variables of the strengths traits plus one for entrepreneurial behaviour. The means, standard deviations and F values for each group’s performance upon each of these tests are reported in table 6-1.

Because each hypothesis was specified before the analyses, and has a specific prediction, it is not necessary to undertake the Bonferroni correction for multiple comparisons.

*Table 6-1: Dyslexia and student group means for significant ANOVA tests*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Strength Trait** | **Student Groups** | **Mean** | **Standard**  **Deviation** | **ANOVA**  **(F value)** | **p-value**  **(*p*)** |
| **Big Picture approach** | *Dys* | 3.91 | 1.19 | 3.266 | .026 |
|  | *Psych* | 3.11 | 0.54 |  |  |
|  | *Mgt* | 3.69 | 0.60 |  |  |
|  | *Arch* | 3.70 | 0.80 |  |  |
| **Visuo-spatial Skill** | *Dys* | 3.80 | 0.59 | 12.773 | .000 |
|  | *Psych* | 3.03 | 0.41 |  |  |
|  | *Mgt* | 3.21 | 0.61 |  |  |
|  | *Arch* | 3.84 | 0.35 |  |  |
| **Innovation** | *Dys* | 3.73 | 0.88 | 2.577 | .060 |
|  | *Psych* | 3.50 | 1.04 |  |  |
|  | *Mgt* | 3.81 | 1.11 |  |  |
|  | *Arch* | 4.30 | 0.66 |  |  |
| **Empathy** | *Dys* | 4.18 | 1.02 | 1.897 | .138 |
|  | *Psych* | 4.28 | 0.75 |  |  |
|  | *Mgt* | 3.63 | 1.10 |  |  |
|  | *Arch* | 3.75 | 1.02 |  |  |
| **Teamwork** | *Dys* | 3.60 | 1.05 | 1.226 | .307 |
|  | *Psych* | 3.17 | 1.04 |  |  |
|  | *Mgt* | 3.38 | 1.02 |  |  |
|  | *Arch* | 3.00 | 1.08 |  |  |
| **Entrepreneurial behaviour** | *Dys* | 4.64 | 0.66 | 4.501 | .006 |
| *Psych* | 4.96 | 0.71 |  |  |
|  | *Mgt* | 4.97 | 0.44 |  |  |
|  | *Arch* | 4.88 | 0.66 |  |  |

The individual results of the individual ANOVAs are detailed below together with the multiple comparison findings and for clarity are displayed in table 6-2.

*Table 6-2: Significance chart for the Big-5 skills and entrepreneurial traits against the student groups*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Dys vs Mgt** | **Dys vs Psych** | **Dys vs Arch** | **Mgt vs Psych** | **Mgt vs Arch** | **Psych vs Arch** |
| ***Big Picture approach*** |  | **\*** |  |  |  |  |
| ***Innovation*** |  |  |  |  |  | **+** |
| ***Visual-spatial skills*** | **\*\*** | **\*\*\*** |  |  | **\*\*** | **\*\*\*** |
| ***Empathy*** |  |  |  |  |  |  |
| ***Teamwork*** |  |  |  |  |  |  |
| ***Entrepreneurial traits*** | **-\*\*** |  |  |  | **+** |  |

\*\*\* (*p*< .001) \*\* (*p*< .01) \* (*p*< .05) + (*p*< .10) – opposite direction to prediction

***Big Picture Approach***

As displayed in Table 6-1 and 6-2, a one factor ANOVA was undertaken, with the factor group having four levels (Dyslexia, Management, Architecture, Psychology). There was a significant effect of group [F(3,72)=3.266, p=0.026]. A bonferroni post hoc test indicated that there were significant differences between the Psychology and Dyslexia groups (*p=*0.020) only.

***Visuo-spatial Skill***

As displayed in Table 6-1 and 6-2, a one factor ANOVA was undertaken, with the factor group having four levels (Dyslexia, Management, Architecture, Psychology). There was a significant effect of group [F(3,72)=12.773, *p<*0.1]. A bonferroni test indicated that there were significant differences between the Architecture and Management groups (p=0.002), Architecture and Psychology groups (*p<*0.1), Dyslexia and Management groups (*p=*0.003) and Dyslexia and Psychology groups (*p<*0.1) only.

***Innovation***

As displayed in Table 6-1 and 6-2, a one factor ANOVA was undertaken, with the factor group having four levels (Dyslexia, Management, Architecture, Psychology). There were no significant effect between groups [F(3,72)=2.577, *p=*0.060]. A bonferroni test indicated that there were statistically significant differences between Psychology and Architecture groups (*p=*0.057) only.

***Empathy***

As displayed in Table 6-1 and 6-2, a one factor ANOVA was undertaken, with the factor group having four levels (Dyslexia, Management, Architecture, Psychology). There were no significant effects between groups [F(3,72)=1.897 *p=*0.138]. A bonferroni test indicated that there were no statistically significant differences between groups.

***Teamwork***

As displayed in Table 6-1 and 6-2, a one factor ANOVA was undertaken, with the factor group having four levels (Dyslexia, Management, Architecture, Psychology). There were no significant effects seen between groups [F(3,72)=1.226, *p=*0.307]. A bonferroni test indicated that there were no statistically significant differences between any of the groups.

***Total Number across the Big-5 (combined)***

Across the Big-5 strengths combined, dyslexics claimed to have more strengths that the psychologists. Dyslexics showed a significantly higher average score (*m*=3.0) than Psychology (*m*=2.1). However there was not much difference in the average score between Architecture and Management students (*m*=2.7 and 2.5 respectively)

**Hypothesis 2**

*Dyslexic students will give higher ratings for empathy than the management and architecture students but not the psychology students*

*Empathy:* No statistically significant differences were seen between dyslexia students and psychology students compared with architecture and management students. In general all students self rated as high on empathy which may have reduced the power of the analysis.

**Hypothesis 3**

*Dyslexic students will give higher ratings for visuo-spatial ability than the management and psychology students but not for architecture students*

*Visuo-spatial skills:* There were statistically significant differences on visuo-spatial skills particularly between the architecture group and management (*p*=0.002) and architecture and psychology groups (*p=*0.000), in visuo-spatial strengths, as we predicted. Both dyslexia and architecture gave higher ratings than the management and psychology students on visuo-spatial skills. Therefore the hypothesis is supported.

**Hypothesis 4**

*Dyslexic students will give higher ratings for entrepreneurial tendencies than the architecture and psychology students but not the management students*

*Entrepreneurship abilities*: There were statistically significant differences (*p*=0.003) between the management and dyslexic group. This indicates that the management group were more ‘entrepreneurial’ in their traits than the dyslexia group.

### Resilience

**Hypothesis 5**

*Dyslexic students show higher levels of resilience than other student groups.*

As displayed in Table 6-3, a one factor ANOVA was undertaken, with the factor group having four levels (Dyslexia, Management, Architecture, Psychology). There was a significant effect of group [F(3,72)=5.829, *p=*0.001]. A bonferroni multiple comparisons test indicated that there were significant differences between the Architecture and Management groups (*p*=0.017), Dyslexia and Management (*p=*0.001) and Management and Psychology groups (*p=*0.24). The Management student group indicated that they were the most resilient scoring higher than the other student groups. The hypothesis was therefore disconfirmed because the Dyslexic students showed lower levels of resilience than all other three groups.

*Table 6-3 Resilience*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Student Groups** | **Mean** | **Standard**  **Deviation** | **ANOVA**  **(F value)** | **p-value**  **(*p*)** |
| **Resilience** | *Dys* | 3.62 | .545 | 5.829 | .001 |
| *Psych* | 3.77 | .541 |  |  |
|  | *Mgt* | 4.28 | .461 |  |  |
|  | *Arch* | 3.76 | .434 |  |  |

### Self-Efficacy

**Hypothesis 6**

*Dyslexic students show higher levels of self-efficacy than other student groups*

As displayed in Table 6-4, a one factor ANOVA was undertaken, with the factor group having four levels (Dyslexia, Management, Architecture, Psychology). There were no significant effects of any of the groups [F(3,72)=2.194*, p=*0.096]. Therefore the null hypothesis is supported. Again the hypothesis is actually disconfirmed, because the dyslexia students showed lower mean scores that the other three groups.

*Table 6-4 Self-Efficacy*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Student Groups** | **Mean** | **Standard**  **Deviation** | **ANOVA**  **(F value)** | **p-value**  **(*p*)** |
| **Self-Efficacy** | *Dys* | 2.83 | .452 | 2.194 | .096 |
| *Psych* | 3.00 | .335 |  |  |
|  | *Mgt* | 3.11 | .336 |  |  |
|  | *Arch* | 3.05 | .286 |  |  |

### Personal Initiative

**Hypothesis 7**

*Dyslexic students show higher levels of personal initiative then other student groups*

As displayed in Table 6-5, a one factor ANOVA was undertaken, with the factor group having four levels (Dyslexia, Management, Architecture, Psychology). There no significant effects of any of the groups [F(3,72)=4.792, *p=*0.004]. A bonferroni multiple comparisons test indicated that there were significant differences between the Management and Dyslexia groups (*p=*0.005) only. Overall there were now differences in personal initiative between groups, however Management showed higher scores of personal initiative than the dyslexia by a margin of significance. Again the hypothesis was therefore disconfirmed because the dyslexic students showed lower levels of personal initiative than all other three groups.

*Table 6-5 Personal Initiative*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Student Groups** | **Mean** | **Standard**  **Deviation** | **ANOVA**  **(F value)** | **p-value**  **(*p*)** |
| **Personal Initiative** | *Dys* | 3.30 | .561 | 4.792 | .004 |
| *Psych* | 3.45 | .603 |  |  |
|  | *Mgt* | 3.93 | .540 |  |  |
|  | *Arch* | 3.79 | .470 |  |  |
|  |  |  |  |  |  |

### Holland Types

Table 6-6 shows the preferred Holland types for all student groups ranked in order of percentage that placed each type first.

*Table 6-6: Holland Types for Each Student Group*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Dyslexia** | **Psychology** | **Architecture** | **Management** |
| **Holland 1** | Artistic (32%) | Social (34%) | Investigative (27%) | Enterprising (44%) |
| **Holland 2** | Realistic (24%) | Conventional (33%) | Conventional (23%) | Social (19%) |
| **Holland 3** | Enterprising (21%) | Artistic (22%) | Artistic (20%) | Conventional (19%) |
| **Holland 4** | Social (18%) | Investigative (11%) | Enterprising (15%) | Investigative (6%) |
| **Holland 5** | Investigative (5%) | Realistic (0%) | Social (10%) | Realistic (6%) |
| **Holland 6** | Conventional (0%) | Enterprising (0%) | Realistic (5%) | Artistic (6%) |

Figure 6.2 shows the student average top two Holland type choices respectively based on their preferred types of careers. For example the black line shows that 35% of the dyslexic students placed a ‘realistic’ career in their top two preferences and 100% of placed ‘artistic’ in their top two preferences.

**Figure 6.2: Holland Types Within Student Groups Top Two Choices (%)**

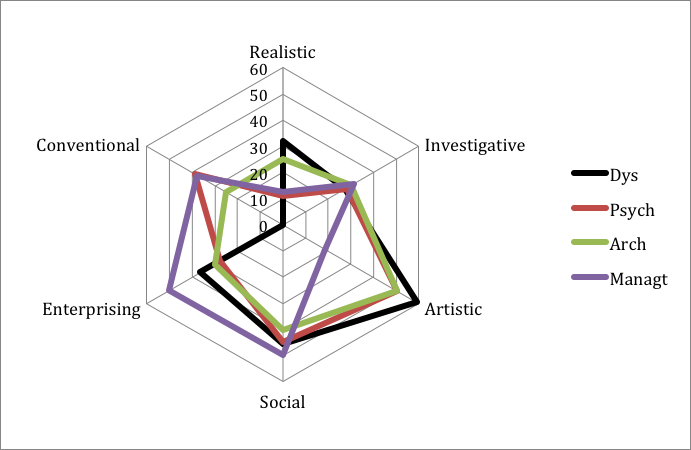
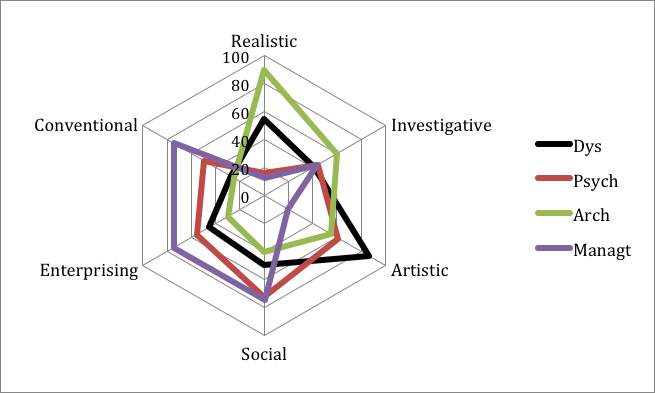


Figure 6.3 indicates corresponding data in the top three choices.

**Figure 6.3: Holland Types Within Student Groups Top Three Choices (%)**



In order to assess the significant differences between groups, Chi-squared analyses were undertaken for each student group compared with the dyslexic group (See Table 6-7). For example the top line indicates that when the chi-squared analysis of the six Holland types was applied to the aggregate data for the dyslexic and psychology groups, significant differences were found, 5 dyslexics putting ‘Realistic’ as their first choice compared with 0 Psychology students. By contrast none of the dyslexics showed the Conventional careers.

*Table 6-7 Significance scores of each student group for the Holland types*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Realistic**  **H1** | | **Investigative**  **H2** | | **Artistic**  **H3** | | **Social**  **H4** | | **Enterprising**  **H5** | | **Conventional**  **H6** | | | |
| **df** | ***p*** | **df** | ***p*** | **df** | ***p*** | **df** | ***p*** | **df** | ***p*** | **df** | | | ***p*** |
| ***Dys vs Psych*** | 4 | 0.061  (5 vs 0) | 5 | 0.601  (1 vs 2) | 5 | 0.316  (7 vs 5) | 5 | 0.192  (4 vs 2) | 5 | 0.068  (5 vs 0) | 4 | | | 0.030  (0 vs 6) |
| ***Dys vs Mgt*** | 5 | 0.003  (5 vs 1) | 5 | 0.366  (1 vs 1) | 5 | 0.002  (7 vs 1) | 5 | 0.392  (4 vs 3) | 5 | 0.080  (5 vs 7) | 5 | | | 0.009  (0 vs 3) |
| ***Dys vs Arch*** | 3 | 0.007  (5 vs 1) | 5 | 0.120  (1 vs 5) | 5 | 0.097  (7 vs 5) | 5 | 0.549  (4 vs 2) | 5 | 0.335  (5 vs 3) | 4 | | | 0.020  (0 vs 4) |
| ***Dys vs (Rest)*** | 5 | 0.056  (5 vs 2) | 5 | 0.421  (1 vs 8) | 5 | 0.021  (7 vs 10) | 5 | 0.572  (4 vs 11) | 5 | 0.425  (5 vs 10) | | 5 | 0.056  (0 vs 13) | |

**Hypothesis 8**

*Holland Types: Compared with Psychologists, dyslexic students will show higher Holland scores of Artistic and Enterprising.*

It may be seen from table 6-7 that there are significant differences for Artistic types but not for Enterprising between Dyslexic and Psychology students.

**Hypothesis 9**

*Holland Types: Compared with the Management students, dyslexic students show higher Holland types of Artistic and Social.*

It may be seen from table 6-7 that there are significant differences for Artistic types but not for Social between Dyslexic and Management students

**Hypothesis 10**

*Holland Types: Compared with the Architecture students, dyslexic students will show a higher Holland score for the Social typology.*

It may be seen from table 6-7 that there were no significant differences for this category. Therefore the hypothesis is not supported.

**Hypothesis 11**

*Holland Types: Dyslexic students will show lower preference for Realistic and lower preference for Conventional Holland types than all three groups*

As can be seen from table 6-7, the dyslexic group showed significantly lower preference for conventional careers than all three other groups. By contrast they showed higher preference for Realistic careers.

## Discussion

Study 3 was designed to investigate the similarities and differences between dyslexic students and students from architecture, psychology and management school departments at the University of Sheffield. The strengths we wanted to particularly investigate were Visuo-spatial skills, Empathy and Entrepreneurial skills respectively. The findings will be discussed in light of the eight hypotheses put forward.

Further literature will be reviewed in the discussion in the context of the findings.

The four personality characteristics assessed (resilience, self- efficacy, innovativeness and personal initiative) were also taken as averages of a number of elements, which assessed specific characteristics. The other characteristics measured are those which have been indicated as dyslexia related characteristics, namely cognitive and interpersonal strengths.

Analysis of responses to the questionnaire highlighted some very interesting findings.

Overall, dyslexic students compared most closely with architecture students in regard to Big-5 strengths (*Big Picture approach, Innovation/Creativity, Visuo-spatial skills, Empathy and Teamwork)* with significant difference between the dyslexic and psychology students on the ‘Big picture approach, and Visuo-spatial skills. The dyslexic students did not score highly in relation to the other student groups on work characteristics however showed high average mean scores overall on dyslexia related strengths compared to the other students.

A large number of items were represented in this questionnaire. Separate analyses were conducted for Holland typologies, entrepreneurial traits as well as findings from across the big-5. Eleven hypotheses were addressed. The structure of the discussion will be an exploration of each of this hypotheses and a discussion around each of them in relation to the results we have found.

1. *. The Big 5 (Cognitive and Interpersonal strength triads): Dyslexic students show perceived strengths on the Big-5 compared to non-dyslexic students*

It was predicted that the dyslexic students show self-perceived strengths on all of the big-5. Dyslexic students showed statistically significant differences in the big-picture approach compared with Psychology students. A statistically significant difference was also seen in relation to visuo-spatial skills with the Dyslexic and Architecture groups being significantly higher score than the Management and Psychology students.

Dyslexic students (*M*=3.68 *SD*=0.64) showed relatively high scores compared to their peers in relation to questions on visuo-spatial skills, such as *“I can visualize objects from different perspectives”* and *“I can view an object and imagine it from multiple angles”.* Whether there is a chance that dyslexics have a high level of skill in visualisation in university is debatable. It could be that most of the students who participated may just have had a particular inclination towards such skills without necessarily overall excelling in such a talent in relation to their peers. A specific comparison between dyslexic and architecture students compared with the other student groups is outlined in Hypothesis 3 discussion.

On Innovation, dyslexic students showed higher mean scores compared to the other student groups (apart from architecture students). The students responded particularly on questions relating to *“I often surprise people with my novel ideas”, “People often ask me for help in creative activities”* and disagreeing on such questions as *“I am not a very creative person”.* Whether the dyslexic students at the university show overall higher self-perceived levels of innovation and creativity in relation to their peers is questionable. The University environment being relatively structured means that the students do not have as much opportunity to be able to explore their creativity and influence on a day-to-day basis. Therefore this could be a strengths trait which is perhaps practiced and developed further once individuals move into the work environment. When they are for example, able to craft their work and tailor the implementation of their day-to-day tasks which requires them to be creative and innovative, particularly in the way that they carry out their work. Particularly the participants in study 1 of this research noted abilities to be innovative and creative. Thus it would still be interesting to further explore creativity and innovation in the context of University environment, and to understand how University helps to nurture such a strength within it’s student population.

On questions relating to the big-picture approach, dyslexic students showed high mean scores compared to the other student groups. There were however only significant differences between the Psychology and Dyslexia groups (*p=*0.020) on the big-picture approach. Questions particularly were focused on *“I like to approach a task in a variety of ways”* and *“I like to see the big-picture on tasks I am undertaking”.* With a larger sample size we will be able to better assess the strength of the relationship between the big picture approach and the various student groups. Students may feel that they are able to show the big picture approach in relation to their peers through the way in which they carry out their work and view the reality around them. Further exploration of examples of using the big-picture approach in University would be very interesting as it could be a skill further developed particularly through the workplace (as noted by the dyslexic high achievers in study 1).

Dyslexic students had a high mean score on empathy compared to the other student groups overall. Overall however there was no significant differences between dyslexia and other students groups on empathy. A reason for this could be that because the University period is a time for individual work as opposed to many opportunities for working with others, the aspect of empathy has not been fully utilised. Even though relatively most dyslexics scored “very much like me” on such items relating to empathy, for example, *“I like to help others”* and *“People tend to come of me for advice on problems they may be having”* the sample may have been too small to see if there was a significant difference between dyslexics and non dyslexics for the hypothesis to be fully supported. This is a strength I think can become further manifested in the workplace, as the strength of empathy needs to be brought out more, especially if the work involves working with other people*.* High levels of empathy may be experienced amongst dyslexics because of their previous difficulties. These experiences of a sense of failure stem from a young age when challenges could therefore begin to occur in school and then throughout sometimes their educational experiences. A specific comparison between dyslexic and psychology students compared with the other student groups is outlined in Hypothesis 2 discussion.

Dyslexic students showed the highest mean score for teamwork in relation to the other student groups. However overall there were no significant differences between dyslexics and the other student groups on teamwork. Items relating to teamwork were *“I prefer a job that allows me to work in teams”* and *“I get on very well with other people in my team”.* Being a team player would be required to assist in bringing out the talents and skills of their colleagues, in order to then delegate effectively and be able to get the best out of everybody. Because this sample was focused on a student population, it could be that the skill has still not fully been practiced, as much of the work at University is towards the attainment of an individuals degree as opposed to heavily based teamwork where everyone is reliant on each other to see progress. It would be interesting to see how teamwork of dyslexics in the workplace can be explored and further developed.

1. *Dyslexic students will give higher ratings for empathy than the management and architecture student but not the psychology students.*

Dyslexic and Psychology students were compared in order to see if they had equally high rating on empathy compared to management and architecture groups. Overall the results indicated similar high mean scores of empathy (*M=*4.28) compared to the architecture (*M=*3.55) and management students (*M=*3.63). Although there were no statistically significant differences there was still evidence that the dyslexia and psychology student groups showed distinctive empathetic traits compared with architecture and management students and thus the hypothesis is supported. (See earlier discussion under hypothesis 1 for empathy). Dyslexic students were predicted to show high levels of empathy as this was a strength outlined by the dyslexic high achievers in study 1, this was compared with the psychology students as they were a group identified to also potentially show strengths in empathy due to the nature of the course undertaken and the potential caring nature of the professions by which psychology students may be inclined towards e.g. clinical psychology.

1. *Dyslexic students will give higher ratings for visuo-spatial ability than the management and psychology students but not for architecture students*

Dyslexic and Architecture students showed the highest mean self-rated score for visual-spatial ability compared to the other students. An explanation for architecture students excelling at these skills is because they have to possess and gain skills for design and construction of complex structures. There were significant differences on visuo-spatial skills particularly between the architecture group and management (*p*=0.002), architecture and psychology groups (*p<*0.001), in visuo-spatial strengths, as predicted. Both dyslexia and architecture are better then the management and psychology students on visuo-spatial skills. Because of the nature of the work of an architect, it requires them to be more holistic in their thinking in order to take into account the bigger picture on the tasks they are undertaking, sometimes in order to see the finished project of a building or structure thus why this student group was used. (See earlier discussion under hypothesis 1 for visuo-spatial skill).

1. *Dyslexic students will give higher ratings for entrepreneurial tendencies than the architecture and psychology students but not the management students*

We predicted that dyslexics and management students would score highly on entrepreneurial abilities compared to architecture and psychology students. Results however indicated that there was a significant difference (*p*=0.003) between the management and dyslexic group on entrepreneurial abilities. This indicates that the management group were more ‘entrepreneurial’ in their traits than the dyslexia group. However both groups overall still showing high mean scores on entrepreneurial traits compared to architecture and management students. Management students focus their work on studying about business related aspects within their studies. Therefore it was expected that they would score highly on entrepreneurial traits because they would also have an interest in in, or even be aspiring to move into business in particular. A larger sample size with also more specifically related to entrepreneurship would be very interesting for further study. In relation to the dyslexic students, it could also be that entrepreneurial behaviour is something, which develops with experience outside of University, as developing ideas, and developing a business plan takes time and knowledge of a particular area.

1. *Dyslexic students show higher levels of resilience than other student groups*

The dyslexic group had the lowest mean resilience score average compared with the other student groups. There was so significant differences on resilience between dyslexic students and the other student groups. There is a strange contrast between the dyslexic student *low* resilient scores and the *high* resilience scores found in the dyslexic high achievers (study 1). What it perhaps shows is that the dyslexic students need to have levels of resilience enhanced in order to succeed coming out of university and into the workplace.

A possible explanation for the dyslexic not feeling particularly ‘resilient’ could be the fact that because they are at University and they do not feel able to really flourish because of the demands of work and deadlines. It could be that because of these conditions, there is not a strong feeling that they are able to bounce back from setbacks when faced with them. Also it could also be that particularly in times of weakness and difficulty ones own perception of how resilient they are may be weakened.

1. *Dyslexic students show higher levels of self-efficacy than other student groups*

There were no significant differences between Dyslexic students for self-efficacy and the other student groups. The dyslexic group however had lower average scores on self-efficacy rating themselves on whether they felt they had self-efficacy as *“not like me”* or *“not at all like me”*. A possible explanation for this is that at the stage of university, apart from exam results and moving into higher education there may not be feelings of success. The high achievers who were interviewed as part of the previous study explained how they felt they had achieved levels of success after many years and after completing a variety of different jobs. The students I interviewed may not be the top in their class and even though have achieved getting into higher education and in some cases were even pursuing postgraduate degrees they didn't feel like success came very easily to them. Perhaps also because at University there are many challenges for students with dyslexia to overcome in terms of time pressures and deadlines then it doesn't give much confidence for being able to cope in a number of situations. Therefore the time being spent at university is rather teasing out weaknesses as opposed to bringing out and developing strengths in an individual. Having an opportunity to monitor one’s success and to also ‘savour’ the moments of success may give a stronger belief that one is able to succeed despite their dyslexia. When I conducted the interviews with the high-achievers (see previous chapters) many of the participants felt that when they encountered a challenge in the workplace they were able to overcome this difficulty and be able to master it when given the right tools and advice. They also noted how much of these coping strategies were developed once they were in the workplace, they had to find ways to overcome their difficulties and through this is gave them a much more positive approach to how they conducted their work and found that eventually they were able to see their work and its associated challenges from a new perspective.

1. *Dyslexic students show higher levels of personal initiative then other student groups*

Dyslexic students showed low mean scores on personal initiative compared to the other student groups but overall there were so significant differences between dyslexic students and personal initiative, thus the hypothesis was rejected. The possible explanation for both of these scores in the dyslexic students could be the result of past negative experiences. For ‘personal initiative’ a possible explanation could be that because they have been unable to spend time in their education experience up to now to really investigate what their strengths are and to try to work to them then they have been unable to really set goals which were based on these strengths. It is very difficult to set goals if thee is no clear aim of what direction these goals will be based upon. The students may simply be struggling to carry out their day to day university tasks, with the pressures of university courses as well as a combination of also still needing support in their dyslexia then leaves very little room and time for feeling a sense of personal initiative in the pursuit of goals. One factor however could be, that because I contacted the participants through the dyslexia and disabilities support services then they were particular dyslexic students who needed a lot of support with their work. There will no doubt be many Dyslexic university students who do feel like they have strong levels of personal initiative, it was only a small sample so it would be interesting to look much wider at the spectrum of dyslexia students and to break down the concept of ‘personal initiative’ into smaller statements which may shed more light onto the reality of the dyslexia students.

1. *Holland Types: Compared with Psychologists, dyslexic students will show Holland scores of Artistic and Enterprising*

There was no significant differences between Psychology and Dyslexic students on Artistic, however there was a significant difference between Psychology and Dyslexic students for Enterprising. Overall mean scores indicated a top 3 Holland code score of Social, Conventional and Investigative (SCI) for Psychology students while Dyslexic students indicated a top 3 Holland code score of Artistic, Realistic and Social (ARS)

Interestingly, University of Sheffield psychology students also scored an almost identical combination in comparison with psychology students at the University of Missouri Psychology students who scored a combination of SIE/ASE ([Missouri University Career Centre, 2013](#_ENREF_75)). Social types [helpers] prefer to deal with people and tend to be helping, informing, teaching, inspiring, counseling and serving (Holland, 1996). Psychology students are likely to possess some of these characteristics because of the nature of the degree they are undertaking which involves study of human behaviour and can lead onto careers which aim to be of a ‘helping’ nature. Dyslexic students are also likely to possess characteristics likened to Artistic and Social typologies because of the opportunities to explore their creativity through the Artistic type careers and also in relation to having proposed degrees of empathy they may have tendencies towards Social type careers which would involve helping and working alongside others on a regular basis.

1. *Holland Types: Compared with the Management students, dyslexic students show Holland types of Artistic and Social*

There was no significant difference in comparing Management with dyslexics on the Social Holland type. However there was a significant difference on the Artistic Holland type (*p=*0.002). Management students had a top Holland choice as ‘enterprising’ and a higher score in relation to the other student groups. Interestingly business and management majors at the University of Missouri gave the Holland scores ESC/R (Enterprising, Social, Conventional/Realistic)

([Missouri University Career Centre, 2013](#_ENREF_75)) which was the same as the students at the University of Sheffield. Enterprising types [Persuaders] prefer to deal with data and people and tend to be persuasive, energetic, sociable, adventurous, ambitious and risk-taking (Holland, 1996). Examples include: leading, managing and organizing. I would have expected that management students would possess some of these characteristics based on their preferences for the types of work they would go into hence studying a management degree which seeks to explore aspects of managing, business, finance and leadership.

1. *Holland Types: Compared with the Architecture students, dyslexic students will show a Holland score of Social*

There was no significant difference between Architecture students with dyslexics on the Social Holland type. Dyslexics placed Social as their third Holland type and Architects placed Social as their fourth Holland type. We expected the Social Holland type to be ranked higher by the dyslexic students as it is within the nature generally of dyslexics to be quite empathetic towards others and therefore to show tendencies towards careers which work with people.

1. *Holland Types: Dyslexic students will show less Realistic and Conventional Holland types than all three groups*

Dyslexic students have preference for Artistic and Realistic typologies, with a clear avoidance of Conventional types. There was a significant difference between the dyslexics and the other student groups in relation to Conventional Holland types as predicted. By contrast however, although there was also a significant different for Realistic preferences this was because the dyslexics showed stronger inclination towards the Realistic Holland type, which was not what we expected. Dyslexic students showed a combination of all types apart from ‘conventional’ with a broad more or less equal score across the types, however scored extremely highly surpassing all the groups on ‘Artistic’. Artistic types like to do creative activities and generally avoid highly ordered or repetitive activities. They have good artistic abilities and value the arts. What this showed that the there is a value on categorising these groups using the Holland occupational types. Conventional types [organisers] however, prefer to deal with data and tend to be careful, conforming, conservative, conscientious, self-controlled and structured. Dyslexic students scored very low on the Conventional typology. This suggests that aspects pertaining to characteristics of conventional careers did not appeal to them. Hence perhaps preferring environments that were less structured and controlled and conservative. Careers that would utilise more social and artistic skills perhaps being preferred. This has implications for understanding how we can enable more dyslexic students to move into unconventional careers which perhaps would enable them to better utilise their skills and abilities.

## Summary of findings

* Dyslexic students showed relative strengths in cognitive and interpersonal skills compared to the non-dyslexic students
* Dyslexic students had low scored in resilience, personal initiative and self-efficacy in relation to non-dyslexic students.
* Dyslexic and Architecture students scored high on Visuo-spatial abilities compared to Psychology and Management students.
* Dyslexic and Psychology students scored high on Empathy compared to Architecture and Management students.
* Dyslexic and Management students scored high on Entrepreneurial abilities compared to Architecture and Psychology students.
* Dyslexic students show a clear tendency towards non-conventional careers in relation to the non-dyslexic students based upon their choice of Holland type.

## Limitations

There are two main limitations we could identify from this study:

Firstly, the groups chosen may not accurately reflect the intended sample we were aiming for. For example, we compared dyslexics with Management students to compare levels of entrepreneurial traits. However Management students may not best equate to entrepreneurs. In order to measure levels of entrepreneurship we would have been better to choose a specific sample of entrepreneurs as opposed to using management students. Also, even though we tested on University students it didn’t necessarily mean that they were successful students. Therefore choosing certain groups to compare against dyslexic students needs further and more careful thought it order to know exactly why they were chosen.

Secondly, statistically significant differences were found between some of the groups on different factors, larger sample sizes might be significant for more factors being investigated.

## Conclusion

This study sought to clarify and address three issues. The first was the need to clarify how these strengths found across both study 1 and 2 could be generalised across a larger sample of dyslexic individuals, particularly in a University student age group. The second issue was the need for a quantitative analysis and the third issue was in relation to how specific these strengths are for dyslexia or do dyslexic individuals just move into careers where these skills are relevant.

Findings revealed that these strengths are seen within dyslexic students to varying degrees and in relation to their peers from across other specialised disciplines.

What was not supported in this study in particular was the Work strengths triad. The Cognitive skills triad was mostly supported (Visuo-spatial skills and Big-picture approach), and the Social/Interpersonal skills triad was supported apart from teamwork and communication skills. You can see here the divergence between the findings in the dyslexic young adult students and the unevenness with the dyslexic high achievers. It therefore changes from who you are looking at and also who we are comparing them with whether they are young adults with dyslexia or older individuals who have been in work for many years and who have more experience.

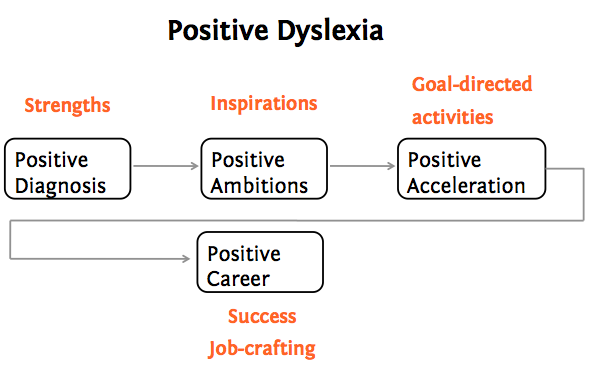
In relation to wanting to identify specific careers suited for dyslexic individuals, at this stage we were not able to create a tool to be able to identify specific careers based on strengths, however this can form the basis of further research, particularly in using Holland’s career typologies as strategy for identifying careers well matched to the personalities of dyslexic individuals. This study has also provided us with adequate insight into what kinds of methods would be appropriate for the development of a ‘work strengths finder’ specifically tailored for dyslexic individuals. We have gathered appropriate evidence at this stage and are well placed to move this research forward to undertake now a more rigorous exploration of career matching with dyslexia strengths.

# CHAPTER 7: Conclusions and Directions for Further Research

## Overview

In the concluding chapter of this thesis, I will outline the findings of the three studies undertaken. I consider the overall implications of these findings, limitations of the work up to date and the directions for future research, concerning the further development of Positive Dyslexia; in particular with the development of a strengths finder aimed at investigating dyslexia strengths. This thesis aimed to develop this area of research, advocating a focus on the identification and development of each individual’s strengths as a counter-weight to the necessary, but limited focus on weaknesses and their remediation. As shown below on the Positive Dyslexia blueprint (Fig 7.1), the first stage was to investigate strengths. The investigation and preliminary characterisation of adult strengths in dyslexia is presented in three studies.

**Figure 7.1 Positive Dyslexia Blueprint**



## Findings from the studies

The aim of this thesis was to understand the contributing factors that led to a strengths based research programme for dyslexia. This research sought to investigate the strengths of dyslexia in working adults and students. The core objective of this thesis was to identify and classify the strengths of dyslexic adults in the working and student population.

I undertook an in-depth literature review in order to collate all the relevant literature on the strengths of dyslexia. Following this I undertook an investigation of strengths from the perspective of dyslexic adults (Study 1) for the purpose of understanding which strengths the dyslexic high achievers identified leading to the taxonomy Fig 7-2. This was followed by interviews with experts in the field of dyslexia research (Study 2) for the purpose of investigating how representative these strengths are across a broader population of dyslexics. Study 3 was carried out to examine how the strengths identified in Studies 1 and 2 could be investigated in dyslexics from a student population and compared with students in certain academic group; entrepreneurial traits and behaviours with Management students, comparing their levels of empathy with Psychology students and comparing their degrees of visuo-spatial ability with Architecture students.

This research followed an exploratory sequential design with two distinct phases. The first phase with studies one and two being of a qualitative nature and phase two, containing study three which was quantitative exploration of findings from phase one through the development of a questionnaire tool.

Study 1 led to the identification of strengths and skills, which were grouped according to the following categories:

**Figure 7.2: Dyslexia Strengths Taxonomy (Themes from Study 1)**

|  |
| --- |
| Work Strengths  Theme 1: Determination/Resilience  Theme 2: Proactivity  Theme 3: Flexible Coping Strategies  Cognitive Strengths/Talents  Theme 4: Big-picture approach  Theme 5: Innovation given an opportunity for Creativity  Theme 6: Visuo-spatial Skills  Inter-Personal Strengths  Theme 7: Teamwork  Theme 8: Empathy  Theme 9: Communication  Integrative Strengths  Theme 10: Unconventional Experience |

The themes shown are categorised into a ‘three-domain’ taxonomy of strengths namely work strengths [conventional], cognitive strengths [unconventional] and interpersonal strengths [unconventional]. This was very useful as themes from the interviews could then be grouped together in accordance with strengths noted from the literature review, leading to a clearer perspective on what the strengths of dyslexia are, individually and in relation to each other. The strengths that were considered *‘unconventional’* (made up of Cognitive and Inter-personal strengths) we named as ‘The Big’6’. With more focused time, I felt that I could have done more research and touched upon a greater number of careers however with the given time scale and the richness of the data provided, I felt there was an adequate sample and that it served and was fit for the purpose that the I had set out to achieve at the outset.

I concluded that many of the given strengths are developed through experience and emerge following school years. Resilience, determination and over-preparation relating to flexible coping strategies, perhaps arise from failures in school while teamwork, communication skills and empathy are perhaps developed partly from the need to receive support during the school years. In relation to cognitive strengths, the wealth of experience of the dyslexic high achievers may support the strengths of the big-picture approach and creativity, while on the other hand; exceptional talents in visuo-spatial skills for example are rare, even in dyslexic adults. Themes such as this therefore require further investigation to examine how well they are represented within the dyslexic population.

Study 2 was carried out in order to address the main limitation of study 1, which was to investigate the generality of the themes from the high achievers across a broader representation of dyslexic individuals as well as noting any additional themes. Semi-structured interviews were carried out with eight experts in the field of dyslexia research and practice. The main themes to emerge from the IPA Analysis were grouped into the following categories:

**Figure 7.3: Expert Themes from Study 2**

|  |
| --- |
| Strengths of dyslexia  Theme 1: Strengths based research needed  Theme 2: Recognised strengths already seen   * + 1. Work success factors     2. Cognitive strengths     3. Interpersonal strengths   Theme 3: Consequences of not finding strengths  Workplace and dyslexia  Theme 4: Benefit for the individual and the workplace  Theme 5: Barriers in the workplace for dyslexics  Theme 6: Gaining experience through work  Support for dyslexia  Theme 7: Ongoing support  Theme 8: Areas of difficulty for dyslexics |

The findings from study 1 confirmed 4 out of the 8 themes extracted from study 2, particularly those relating to the ‘Big-6’ unconventional strengths (namely cognitive and interpersonal strengths). Additional themes observed from the experts were *Areas of difficulty for dyslexics, Benefit for individual and the workplace, Barriers in the workplace for dyslexics* and *Ongoing Support.* Every expert interviewed concluded the need for a positive approach to dyslexia and all shared their own experiences as well as their personal interest in seeing it move forward.

As part of phase two, I aimed to address three issues arising from both studies 1 and 2. The first was to carry out a quantitative study on the strengths of dyslexia. The second was to investigate the emergent themes from phase one in younger dyslexic adults, to see if the same themes emerged. The third was in relation to whether non-dyslexic specialist student groups would show similarity to dyslexic students in the ‘Big-6’ strengths. I felt study 3 addressed these issues to some extent. This was done through the development of a questionnaire instrument designed to further explore these themes.

Study 3 was an investigation into the strengths of dyslexia in a student population.

The purpose of this study was to attend to 5 main points: the first, to introduce a quantitative methodology into the investigation of strengths, particularly in relation to the ‘Big-6’ to investigate how generalisable these strengths are across a larger group; second, to investigate prevalence of the work strengths triad in dyslexic young adults; third, to primarily investigate the developmental trajectory of dyslexia strengths, to understand whether they arise out of experience or are innately present an fourth, to investigate the differences in strengths between dyslexic and non-dyslexic specialist student groups. Finally, we wanted to investigate how dyslexic and non-dyslexic students matched up to Holland Vocational types and to assess the similarities and differences between the groups.

A questionnaire was distributed to 22 dyslexic participants and 54 non-dyslexic students from across four student groups at the University, a dyslexic group of students and then three groups of students with a specialty in a particular skill that was relevant to their chosen course. Psychology students were compared in order to compare levels of *Empathy,* Management students chosen in order to investigate comparisons in *Teamwork* skills and *Entrepreneurial* traits and Architecture students to compare whether there was a significant difference in the levels of *Visuo-spatial* awareness.

From this, I concluded that there were individual variations between students as well variations between groups. Dyslexic students showed relative strengths in cognitive and interpersonal skills compared to the non-dyslexic students, however did not show support of the work strengths triad. In particular they showed similar strengths in Visuo-spatial skills to Architecture students, Empathy to Psychology students and Entrepreneurial traits to Management students. Dyslexic students also showed a clear tendency towards non-conventional careers in relation to the non-dyslexic students based upon their choice of Holland type.

## Contributions to the Existing Literature

As noted above, strengths-based research has been anecdotal and piecemeal, leading to difficulties in assessing how characteristic the strengths for dyslexia are, and how specific they are to dyslexia. The strategy I therefore adopted was an exploratory sequential research design. This meant surveying the area through the use of semi-structured interviews with high achievers and detailed case studies. From this it allowed me to derive a taxonomy, informed by themes arising and/or theoretical considerations. I then moved onto the second phase, the development of a quantitative study with different groups of students to see if the themes were generalisable across a larger and younger sample. The development of case studies led to the Strengths Triads, a completely novel taxonomy, uniquely covering a range of intra-personal, inter-personal, and work related skills. The study with students established that there were indeed considerable variations both within dyslexic students and within non-dyslexic students (as one would expect). Nonetheless, the Cognitive Skills Triad and the Social Skills Triad were found to be characteristic of the dyslexic students overall, and not characteristic of the non-dyslexic students overall. Interestingly, the Work Skills Triad was not found for the dyslexic students, suggesting the Work Skills actually develop through work experience. Taken together, the studies suggest a range of further fruitful issues to follow up, as intended, and I am confident that the research with stimulate future theoretical and applied developments.

Finally, a distinctive contribution of the research is the implementation of the exploratory sequential research design, leading to the systematic application of both qualitative and quantitative methods, thereby providing the empirical underpinnings for the positive dyslexia paradigm.

## Limitations of the Research

The major limitations of this research are as follows:

Study 1

The key issue related to the generality of the findings.Although eight participants was deemed sufficient for the purpose of this study and fulfilled our aims and objectives, the key question was then to understand how representative these findings are compared to a broader sweep of the dyslexic population and how we could make sure that more strengths were taken into consideration and not those just confined to the eight participants. Hence this was why the second study was carried out.

The second limitation concerned the types of professions chosen. Eight participants were selected from across eight different professions. It obviously does not account for all the types of disciplines that individuals with dyslexia specialise in and therefore high achieving dyslexics cannot just be confined to certain careers.

The third limitation of study 1 is that these were self-report interviews with no objective quantitative analysis. This kind of study is essential however, as it lays the foundation for further potential study, for additional quantitative analysis to be conducted and for other methods to be tested out. Study 3 aimed to address these limitations.

Study 2

The limitation of study 2 (the same as study 1) was that these interviews were conducted in the style of self-report with no objective quantitative analysis. I aimed to address this issue in study 3 when undertaking quantitative analysis with the University students.

Study 3

There are three main limitations we could identify from this study:

Firstly, the groups chosen may not accurately reflect the intended sample we were aiming for. For example, we compared dyslexics with Management students to compare levels of entrepreneurial traits. However Management students may not best equate to entrepreneurs. In order to measure levels of entrepreneurship we would have been better to choose a specific sample of entrepreneurs as opposed to using management students. Also, even though we tested on University students it didn’t necessarily mean that they were successful students. Therefore choosing certain groups to compare against dyslexic students needs further and more careful thought it order to know exactly why they were chosen.

Secondly, even though some significant differences were found between some of the groups on different factors, larger sample sizes might be more supportive of the Cognitive and Interpersonal Strengths tested.

Thirdly, there was difficulty in regards to the questionnaire included some confusion over some of its items. Not all questions were also relevant to the hypotheses we had put forwards and therefore the questionnaire could be better refined to reflect the hypotheses being asked. This can be addressed in the follow up study.

### Limitations of Approach Adopted

*Sample size* – As noted earlier, extant strengths literature has been rather selective. In determining the sample size, I was guided by two principles: first to gain rich data for each individual by using the qualitative IPA analyses, with the aim of identifying the range of strengths; and second, the need to gain a reasonable cross-section of participants, representing a range of careers, so as to allow generality by comparing between the individuals. The sheer practicalities of the time-consuming nature of the IPA approach naturally limited the number of participants I could include. My study using the experts in the field – which I deliberately undertook after deriving my own themes from the IPA analyses, provided a further, and remarkably effective method of assessing the generality of the results, because I was able to tap into the wisdom of the experts who had interviewed at least a thousand dyslexic adults and children between them.

There were inevitably limitations of my work, as I discuss below:

*Interaction with participants -* some participants had a tendency to ‘wander’ off the topic. I feel with greater experience in practicing interviewing and more prompting more clarity could have been achieved

*Social desirability* - There is always an increased the risk that the participant would give the most socially acceptable response to a question- an explanation for which could be because of the focus on strengths. All participants were eager as well as excited to be discussing strengths.

*Interpretation of the data* - Even though I remained as reflective as possible throughout the interview process I feel that the interpretation of the themes was a limitation of carrying out such research. Attention needs to be given to questioning certain words such as *‘strengths’ or ‘coping strategies’,* used by participants so as not to make assumptions to ensure that we understand the word or phenomenon in the same way. It was a challenging however informative to myself as a researcher and one which I would use again. The inter-rater reliability analyses that I undertook did provide confidence that my interpretations were appropriate, in the vast majority of cases, but there were inevitably some areas of disagreement, with the major ones being Determination/Resilience and Flexible coping strategy.

These limitations can be overcome in the future by being conscious of the issues presented, interviewing more participants and being assisted by other researchers in carrying out inter-rater reliability so as to address the issue of Interpretation of themes.

Phase 2 of the research was intentionally wide-ranging, attempting to gain preliminary answers on the generality of the findings for dyslexic students. Since no such studies had been undertaken previously, it was difficult to know which variables to assess in the quantitative questionnaire, and some (especially the Job Characteristics component) proved to be of limited usefulness. Nonetheless, many of the questions did prove valuable, in particular the Strengths Triads questions, leading to the identification of statistically significant differences between student groups, and fully justifying the approach taken.

### The Shortcomings and Challenges of a New Research Field

As previously stated, strengths-based research has thus far been anecdotal and piecemeal, leading to difficulties in assessing how characteristic the strengths for dyslexia are, and how specific they are to dyslexia. Conclusions could not have been drawn prematurely, the territory first of all needed to be investigated. This was a major challenge as it was essentially working out where we could start the research off with doubtful representativeness. Employing the use however of the Exploratory Sequential Research Design provided me with a breakthrough to tackling it. The research made some novel findings and had through the development of a strengths taxonomy given rise to as many new questions as well as answers. This research is a stepping-stone to bridging the gap between dyslexia strengths research and practice. However further work needs to be done to strengthen the ongoing frameworks in order to begin to see practical contributions to the lives of dyslexic adults, their families and workplaces.

Overall conclusions of this thesis are as follows:

* In the first study with dyslexic high achievers, ten themes were identified, which were classified into a three-domain taxonomy: Work Strengths, Cognitive Strengths and Inter-personal Strengths. A 'triad' of strengths were found in each domain: for the Work Domain, *Determination / Resilience, Proactivity* and *Flexible Coping*; for the Cognitive Domain, *Innovation, Big Picture approach,* and *Visuo-spatial skill*; for the Interpersonal Domain, *Teamwork, Empathy* and *Communication*.
* In the second study, interviews with eight dyslexia experts agreed on the following themes: *cognitive strength and interpersonal strengths (The Big-6), benefit for individual and the workplace* and *gaining experience through work.*  The themes emerging from these interviews were *ongoing support, areas of difficult for dyslexics* and *consequences of not finding strengths.*
* The third quantitative study highlighted distinctive findings observed between dyslexic students and other student groups, particularly in support of the ‘Big-6’ strengths of dyslexic individuals as well as the affinity of dyslexic individuals towards the selection of non-conventional careers.
* We conclude that there is a diversity of strengths in dyslexia, but that there are also commonalities between the strengths, offering the hope that dyslexia-friendly career advice and talent development systems may be developed. The findings have strong implications for parents, schools and employers.

## Directions for Further Research

### Developing a Dyslexia Work Strengths Finder

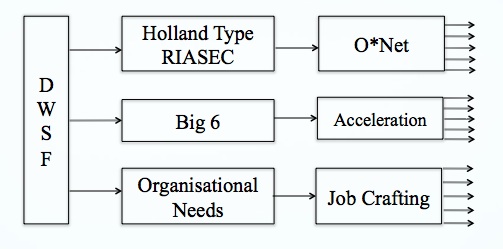
Looking back at the Positive Dyslexia blueprint (Figure 7-1) we have managed to make a significant contribution to better understanding the strengths of dyslexia in this research. In support of further development of Positive Dyslexia research, conclusions from the studies indicate the need for effective tools to be developed in order to enable a dyslexic individual to better understand their own strengths. Following on from this research I would suggest that further work be carried out, particularly further investigation of the strengths of dyslexia in the workplace.

Following on particularly from study 3, there is an opportunity to further develop the questionnaire into a work strengths finder for dyslexia, the aim of which would be to explore aspects of the work environment and hone in on the skills and strengths which are found to be present in dyslexic individuals in various combinations and at various levels. The make up of such a strengths finder would initially include combinations of using the ‘big-6’ strengths, Holland occupational types and organisational elements, including elements of Morgeson’s job characteristics.

Combining the various elements together offers various potential directions for the development of the dyslexia work strengths finder (DWSF). Using the Holland Occupational types, individuals can utilise such resources such as O\*Net which is an online US job-seekers resource. Designed to supplement career advice it gives a very comprehensive outline of an individuals possible occupation choices based on their interests, abilities and skills. This holds much potential for an individual with dyslexia to be able to use it after being informed of their relative strengths using the DWSF and supplemented with further development of their specific strengths in relation to the Big-6. It particularly holds much promise for a University setting and the empowerment of students throughout their University degrees in preparation for entering the world of work.

The structure for the acceleration and implications of a dyslexia work strengths finder is as follows:

**Figure 7.3: The Dyslexia Work Strengths Finder Design Plan**



### Future Research Agenda

It is appropriate to consider whether the set of skills and strengths identified in this research and likely to develop through work experience or perhaps a work-based talent management programme. It is likely that the social skills and the work success factors will indeed be targeted by such programmes. Indeed in a recent analysis of talent management issues, [Ruyle (2010](#_ENREF_99)) identified eight core skills that are the hardest to train at work, and therefore the most valuable pre-training. These core skills included Innovation management, Conflict management, Political savvy, Understanding others, Negotiating, Sizing up people, Interpersonal savvy, and Building effective teams. With the exception of innovation, which is one of the cognitive strengths self-reported by the participants, the other 7 core skills are all in the inter-personal domain, and correspond well to those reported by the interviewees. Studies of expertise, eg. [Ericsson, Krampe, and Tesch-Romer (1993](#_ENREF_29)) have identified the ‘ten year rule’ for development of exceptional expertise in any domain, and highlight the importance of starting young, since this gives a head start that others never fully catch up. It is striking that dyslexic children learn very early on about the differences between individuals, they realise that they are lacking core skills in literacy, and learn to recognise which children have the skills they need and are also disposed to help them. They also learn early the dangers of failure, the importance of practice, the need to find workarounds for conventional skills, and the possibilities of finding different methods for solving problems. Those that succeed will also have developed the resilience to cope with repeated and continual setbacks. In short, they have been learning some of these hard-to-learn skills for at least 10 years at school before their co-workers have encountered them.

Consequently, identifying strengths and aiming towards careers, in which these strengths are valued, will prove a highly adaptive strategy for dyslexic individuals of any age.

From the perspective of the organisations involved, whether it be a school or work organisation, the appropriate context in which this will be considered will be talent management rather than disability accommodation. Any organisation that is able to identify, develop and utilise the diverse talents of its workforce will gain a distinct competitive advantage in the future.

### Talent Diversity

A leading part of the moment of the Positive Dyslexia movement is the concept of ‘Talent Diversity’ ([Nicolson, 2014](#_ENREF_85)). In a recession dyslexic workers face redundancy rather than promotion. So, the issue being addressed is as follows– why should organisations value the strengths of their dyslexic employees? A major issue for Western countries is the competition from other countries with lower labour costs, greater natural resources, and rapidly improving educational standards. [Pink (2006](#_ENREF_94)) argues that conventional, rational, problem solving skills are no longer sufficient – we need ‘unconventional’ skills like innovation, design, consumer engagement and adaptability. Therefore a key question concerns how we should identify and release ‘unconventional skills’ in the workforce. This issue we can term as ‘Talent Diversity’ – making optimal use of the diverse talents within the workforce. The answer links directly to dyslexia.

We have (myself and colleagues) undertaken three studies assessing unconventional skills in successful dyslexic adults and dyslexic University students. The studies provide coherent evidence that successful dyslexic adults show a range of distinctive skills, and that these skills may be best characterised in terms of a ‘3 strengths domain’ taxonomy. These comprise the [unconventional] ‘cognitive strengths triad’ of big picture vision, innovation and post-formal thinking, and the [unconventional] ‘inter-personal strengths triad’ of empathy, teamwork, and communication, augmented in the successful careerists by the [conventional] ‘work strengths triad’ of proactivity, resilience and preparation. I termed the two unconventional triads as ‘The Big 6 Strengths’, and this analysis suggests that the majority of dyslexic students and successful dyslexic adults possessed all six.

The research aim is framed as ‘Facilitating Talent Diversity’. We will utilise the established ‘Theory of Planned Behavior’ framework ([Ajzen, 1991](#_ENREF_1)) which highlights three synergistic requirements for a given behaviour: (i) improving stakeholders’ attitudes to the behaviour; (ii) improving the positive profile of the behaviour; (iii) making it easier to implement the behaviour.

The proposed research includes all stakeholders via a multi-level, multi-sector, multi- strand approach. Four levels are covered: the individual, the middle manager, the organisation leader, and society. The first stage of research which will be carried out will be case studies and qualitative interviews on current approaches to Talent Diversity with the Public Sector (including local government, higher education, and health).

## Closing

In summary, this has been the first thesis to investigate systematically the strengths of successful dyslexic adults as assessed both by themselves and by experts in the field and then to apply this to the population of dyslexic students, comparing them with students from other disciplines. The findings from the initial studies suggests an unexpected homogeneity in the strengths established in terms of Work strengths; *Resilience/determination, Flexible Coping* and *Proactivity,* Cognitive Strengths; Visuo*-spatial skills, Innovation/Creativity and Big-picture approach* and Interpersonal/Social strengths; *Empathy, Communication skills and Teamwork.* These were largely supported by the experts leading to the concept of the three ‘triads of strengths’, underpinned by experience. The studies with the dyslexic students and their peers from other disciplines supported this general picture in terms of the cognitive strengths triad, and to an extent the interpersonal/social strengths triad, though I found that each discipline had its own characteristic profile of strengths with the architects also showing the big-picture approach aside from enhanced visuo-spatial abilities. However, the work strengths were more apparent in their absence in the student population, this leads to important issues as to whether dyslexic students should be specifically taught skills of resilience, proactivity and flexible coping in order to help them to succeed in work and to reverse the decade of anti-resilience training through promoting their weaknesses. Therefore we are finding greater heterogeneity in the student population, both in the dyslexic students and in the other students. Therefore the fascinating issue to emerge is whether having a successful career actually causes these strengths to emerge and is it the case that the considerable majority of dyslexic students will not be able to reverse the deficits that they show in terms of these skills. These are fruitful areas of furtherresearch that need to be explored if the science of Positive Dyslexia is to take hold and to be effective.

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# Appendices

## Appendix 1: Study 1 Interview Schedule

Dyslexia in the Workplace: A Strengths Approach

Having Dyslexia

Would you please share your experiences of having dyslexia? When you were first diagnosed with dyslexia?

How do you feel you were perceived by others and yourself before your diagnosis?

Prompt: How/if at all did your perception of yourself change after diagnosis?

Experiences of work or school

If we look at your areas of work as an adult with dyslexia, how do you feel you are suited to your work and do you feel your skills match up with it?

How did you choose what job you applied for/decided upon? What were the characteristics of the type of work that drew you towards a particular job/career path?

Was there a particularly influential person who assisted you in making career choices in relation to your strengths?

Looking back on your experiences – at work and at school – what were the sorts of working conditions that you found particularly challenging?

If you could, would you of done anything differently?

What do you think the difficulties are for someone with dyslexia in the workplace?

Succeeding with Dyslexia

Can you tell me about your preferred learning style(s)?

Prompt: Is there a special way that you learn or that you developed in response perhaps to a particular difficulty?

Can you explain the way you feel your mind works differently to others?

Prompt: Do you think you learn differently to others? E.g. are you a visual thinker?

When faced with a task, do you think you display any type of method to help you in solving it in relation to your dyslexia?

Prompt: special ability, creativity, thinking outside the box?

Have you become good at avoiding tasks which can highlight your dyslexia? ~Can you give examples?

Aspects of dyslexia that could be considered strengths

Can you give any examples of the way you have used the strongest aspects of your dyslexia to overcome barriers in the workplace?

Do you gain new skills and strengths in working around difficult areas and coming up with alternatives?

Are you innovative?

Would you say there is a specific approach to take to looking at things? Big-Picture approach to tasks?

Resilience

In times of difficulty or when experiencing disappointment do you manage to overcome obstacles and move on? Can you draw from any experiences from where you can share how you managed to do it?

What would you say to anyone who just found out or thinks they have dyslexia and feels that they cannot be successful?

Skills, abilities and character traits

Do you feel you are able to put yourself in settings that maximise your skills and interests?

Do you feel you have chosen your work and your leisure to put your best abilities into play every day, if possible?

## Appendix 2: Ethics forms for IPA interviews

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**INSTITUTE OF WORK PSYCHOLOGY**

**RESEARCH ETHICS APPROVAL FORM**

**SUBMISSION TO IWP ETHICS AND APPOINTMENTS COMMITTEE**

NAME(s) of investigator(s) Sara Agahi

Submission date 18th February 2011

Anticipated starting date Week commencing 28th Febuary 2011

Anticipated end date Completed pilot study approximately June 2011

Source of funding Self Funded

MSc/**PhD** (ring one if applicable) Supervisor: Prof. Rod Nicolson

Is any other Ethical Committee involved? yes/**no**

If YES give details of committee and its decision (if known)

Is this: (a) a "one-off" study? Tick the appropriate box

or: (b) one of a series? x

If (b), is it the first in the series? **yes**/no

1. Title of investigation:

Dyslexia in the workplace: A strengths based approach

2. Purpose of study (Aims):

To characterise the professions and roles that are well suited to adults with dyslexia

To better adapt the working environment to allow adults with dyslexia to demonstrate their true capabilities.

3. **Brief** description of design and procedure:

The design of the interview is characterised by Interpretative Phenomenological Analysis (IPA) using semi-structured interviews. I hope to conduct a dozen or so interviews with participants who have Dyslexia. The purpose of the interviews is to gain an overview of what successful adults do see as their strengths- and their weaknesses and how they get round them. The interview questions will take on a framework of 10 or so pre-determined questions I will be asking in the hope will encourage focus on the individuals subjective experience. Each interview should last about an hour or so. The aim of developing a schedule is to facilitate a comfortable interaction with the participant which will, in turn, enable them to provide a detailes account of the experience under investigation.

4. i) Equipment and facilities to be used:

Voice recorder and recording equipment

ii) Location of investigation:

The participant’s preferred setting/environment as long as it is quiet and with no interruptions.

5. List all measures to be used in the study (e.g. specify performance measures, attitude scales, affective states, behavioural measures.

**(See attached: Questions for participants)**

Performance measures based on participant’s willingness to be open and talk freely in response to questions asked my myself.

Attitude scales will be looking at participants feelings, perceptions, likes, dislikes, interests and preferences towards their dyslexia and strengths of their Dyslexia.

The questions are not aimed at producing highly emotional or distressing states. Participants may tap into memories or experiences which at a time would have been perhaps related to a turbulent time but will be seen in a positive light and will be used as a portal for moving into looking at a persons strengths in how they overcame it. The measures also being considered include, hope, resilience, self-efficacy and optimism in the participants.

6. Participants:

(i) Selection criteria

Participants will be selected using the following criteria.

Adult

dyslexic

Successful within the workplace

(ii) Is it planned that the participants be minors or suffer from mental disorders or mental handicap?

**NO**

(iii) What arrangements will be made to obtain the free and informed consent of all participants?

All to have received a telephone call from myself or Prof. Nicolson to initially participate and recruit participants in order to see if they fit criteria. All will receive a participant information sheet regarding interview purpose and question procedure as well as a consent from to be filled in and returned prior to commencement of interview. All will be asked at the beginning of the interview if they agree to being recorded. It will be stressed that they may discontinue the interview at any time for any reason.

7. Will the study involve the deliberate use of: (check appropriately)

(i) Unpleasant stimuli or situation No

(ii) Surgical procedures No

(iii) Deprivation or restriction (e.g. food, water, sleep) No

(iv) Drug administration No

(v) Physiological recording techniques - invasive No

- non-invasive No

Give details of any item checked

8. Will the study embody any other procedure which might cause distress to the participant or impair their work performance? If so, please specify.

No

9. Will the study involve: (check appropriately)

(i) Actively misleading or deceiving the participants yes/**no**

(ii) Withholding information from participants about

the nature or outcome of the study yes/**no**

(iii) Any inducement to take part in the research yes/**no**

Give details of any item checked including details of the steps which will be taken to debrief the participants in the cases of (i) or (ii):

10. What steps will be taken to keep records on individuals anonymous and confidential?

Please detail separately: written, audio, visual and computer records.

i) Written: All written consent forms will be kept by myself in a safe place. There will also be a short questionnaire to be filled out at the beginning of the interview which will contain participant information. (See attached) This will also be kept confidential for the purpose of identification with analysis.

ii) Audio: This will only be heard by myself and my supervisors, I will be doing all the transcription myself. Each interview will be identified with a code and no names will be stated during the interview to keep participants anonymous. The coding will be destroyed .

iii) Visual: No visual records of individuals will be used.

iv) Computer: As noted earlier all computer based information will be stored in anonymous format. Authorised access will be limited to the supervisory team.

11. What steps will be taken to give feedback to participants?

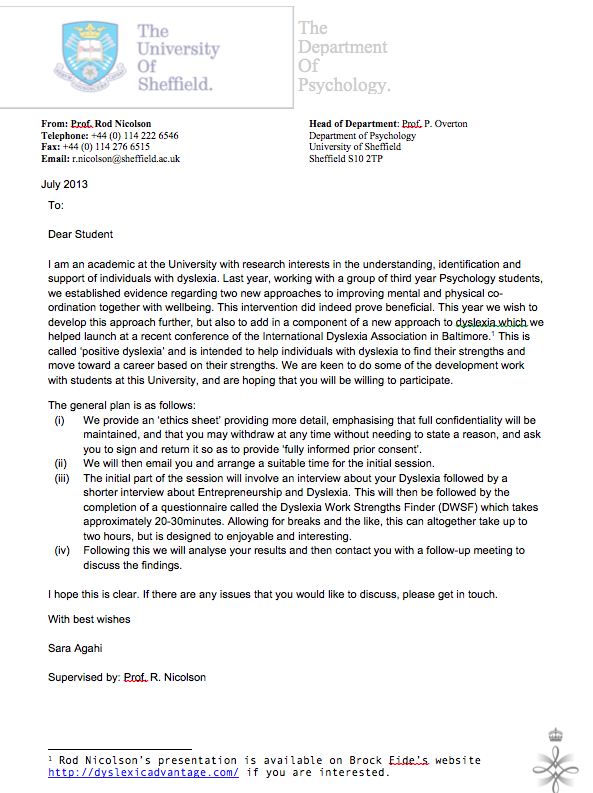
Transcripts will be made available to participants and changes made if preferred

12. What will be done about individuals whose scores signify potential hazards for them or for others (e.g.. maximum score on GHQ; impaired peripheral vision in a driver)?

n/a

13. If you feel that the proposed investigation raises ethical issues please outline them below:

## Appendix 3: Letter to Participants

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## Appendix 4: Letter of Consent

## Appendix 5 : Questionnaire



**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Male Female**

**Date of Birth: \_\_\_ / \_\_\_ / \_\_\_\_\_\_**

**Stage of work: (University/Workplace) *please describe***

**­­­**

**I am willing to take part in this survey:**

***Signed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_ / \_\_\_ / \_\_\_\_\_\_\_\_***

**Have you ever had a Dyslexia Assessment? Y N**

**If you were choosing your ideal job, which of these work characteristics would be the most important to you?**

***Please mark each characteristic as either: Extremely Important/Very Important/Fairly Important/Not important/ Not at all import***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Work Characteristics**  Morgeson, F. P., & Humphrey, S. E (2006) The Work Design Questionnaire (WDQ): Developing and Validating a comprehensive Measure for Assessing Job Design and the Nature of Work. *Journal of Applied Psychology, 91,* 1321–1339. | | | | | | | |
|  | | | **Importance (√)** | | | | |
| **Job Characteristics** | | **Description** | **Extremely Important** | **Very Important** | **Fairly Important** | **Not Important** | **Not at all important** |
| 1 | ‘Do it myself’ scheduling | *The job allows you to decide how you plan and schedule the way you do your own work* |  |  |  |  |  |
| 2 | Decision making | *The job allows you to make decisions and take your own initiative and personal judgment in your work* |  |  |  |  |  |
| 3 | How I do my work | *The job allows you to make decisions on what methods you use to complete your work* |  |  |  |  |  |
| 4 | Task Variety | *The job provides you with a wide variety of tasks and allows you to do a variety of different things* |  |  |  |  |  |
| 5 | Job affecting others | *The results of your work significantly affect the lives of other people. It may have an impact on people outside the organization.* |  |  |  |  |  |
| 6 | Identity of one’s tasks | *The job will involve completing a piece of work with an obvious beginning and end. The job will allow you to complete work you start.* |  |  |  |  |  |
| 7 | Feedback from Job | *The job will provide you with clear information on the effectiveness of your job performance and will itself provide feedback.* |  |  |  |  |  |
| 8 | Job Complexity (reverse scored) | *The job requires that you will do one task or activity at a time and the tasks will be relatively simple and uncomplicated.* |  |  |  |  |  |
| **Job Characteristics** | | **Description** | **Extremely Important** | **Very Important** | **Fairly Important** | **Not Important** | **Not at all important** |
| 9 | Information Processing | *The job will require you to monitor a great deal of information. It will also engage you in a large amount of thinking and analyzing of information.* |  |  |  |  |  |
| 10 | Problem-Solving | *The job will involve solving problems that have no obvious correct answer. It will require you to be creative and to deal with problems you may not have met before.* |  |  |  |  |  |
| 11 | ‘Big-picture’ approach | *The job will allow you to approach a task in a variety of ways and allow you to see the big-picture on the tasks you are undertaking.* |  |  |  |  |  |
| 12 | Skill Variety | *The job will require you to use a variety of skills in order to complete the work. Some of these may involve complex or high level skills.* |  |  |  |  |  |
| 13 | Innovation | *The job will allow you to be innovative in your work and to be able to express your ideas and will allow a space for creativity* |  |  |  |  |  |
| 14 | Empathy | *The job will allow you to help others and how to learn more about your work* |  |  |  |  |  |
| 15 | Expertise and skills on the job | *The job is highly specialized in terms of purpose, tasks or activities. It will require a depth of knowledge and expertise.* |  |  |  |  |  |
| 16 | Developing skills | *The job provides training and the opportunities to develop other skills* |  |  |  |  |  |
| 17 | Preparation Time | *The job will give you time to plan, organise and prepare for your work.* |  |  |  |  |  |
| 18 | Social Skills | *The job will give opportunities for developing close friendships. People at work will take a personal interest in you, and people at work are friendly.* |  |  |  |  |  |
| 19 | Teamwork | *The job requires you to work with others in teams.* |  |  |  |  |  |

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| **Job Characteristics** | | **Description** | **Extremely Important** | **Very Important** | **Fairly Important** | **Not Important** | **Not at all important** |
| 20 | Job Dependence | *The job will require you to accomplish your job before others complete theirs. Other jobs will depend on your job.* |  |  |  |  |  |
| 21 | Received Interdependence | *The job activities are greatly affected by the work of other people and will depend on many people for task completion.* |  |  |  |  |  |
| 22 | Interaction Outside Organisation | *The job will involve spending a great deal of time and communication with people outside the organization. .* |  |  |  |  |  |
| **Job Characteristics** | | **Description** | **Extremely Important** | **Very Important** | **Fairly Important** | **Not**  **Important** | **Not at all important** |
| 23 | Feedback from Others | *You will receive a great deal of information from your manager and co-workers about your job performance in terms of quality and quantity.* |  |  |  |  |  |
| 24 | Ergonomics | *The workspace allows for all kinds of differences between people. The seating arrangements on the job are adequate.* |  |  |  |  |  |
| 25 | Physical Demands | *The job requires a lot of physical effort.* |  |  |  |  |  |
| 26 | Work Conditions | *The job will provide a comfortable working environment* |  |  |  |  |  |
| 27 | Equipment use | *The job involves the use of a variety of different equipment or technology.* |  |  |  |  |  |
| 28 | Insulation | *The workspace allows you to insulate yourself from the rest of work* |  |  |  |  |  |
| 29 | Noise levels | *Your workspace is relatively quiet.* |  |  |  |  |  |

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|  | | | | | | | |
| **Personality Types** | | | | | | | |
| **Resilience** [Stephens et al (2013) Relationship Quality and Virtuousness: Emotional Carrying Capacity as a Source of Individual and Team Resilience. *The Journal of Applied Behavioral Science.* 1–29] | | | | | | | |
| **30** |  |  | **Very much like me** | **Like Me** | **Sometimes like me** | **Not like me** | **Not at all like me** |
|  | 1 | *I am getting better at my work because I learn from my mistakes* |  |  |  |  |  |
|  | 2 | *Dealing with difficult colleagues (or situations) enables me to grow* |  |  |  |  |  |
|  | 3 | *I see challenges as an opportunity to learn* |  |  |  |  |  |
|  | 4 | *I find ways to handle unexpected situations* |  |  |  |  |  |
|  | 5 | *I bounce back when I confront setbacks at work* |  |  |  |  |  |
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|  | | | | | | | |
| **Personal Initiative** [Frese, M. et al (1997) The Concept of personal initiative: Operationalization, reliability and validity in two German samples. *Journal of Occupational and Organizational Psychology.* 70, 139-161] | | | | | | | |
| **31** |  |  | **Very much like me** | **Like Me** | **Sometimes like me** | **Not like me** | **Not at all like me** |
|  | 1 | *I actively attack problems* |  |  |  |  |  |
|  | 2 | *Whenever something goes wrong, I search for a solution immediately* |  |  |  |  |  |
|  | 3 | *Whenever there is a chance to get actively involved, I take it* |  |  |  |  |  |
|  | 4 | *I take initiative immediately even when others don’t* |  |  |  |  |  |
|  | 5 | *I use opportunities quickly in order to attain my goals* |  |  |  |  |  |
|  | 6 | *Usually I do more than I am asked to do* |  |  |  |  |  |
|  | 7 | *I am particularly good at realizing ideas* |  |  |  |  |  |
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| **Efficacy Scale [**Schwarzer, R., & Jerusalem, M. **(1995)**. Generalized Self-Efficacy scale. In J. Weinman, S. Wright, & M. Johnston, *Measures in health psychology: A user’s portfolio. Causal and control beliefs* (pp. 35-37). Windsor, UK: NFER-NELSON.] | | | | | | |
| **32** |  |  | **Not at all** | **Hardly True** | **Moderately True** | **Exactly True** |
|  | 1 | *I can always manage to solve difficult problems if I try hard enough* |  |  |  |  |
|  | 2 | *If someone opposes me, I can find the means and ways to get what I want* |  |  |  |  |
|  | 3 | *It is easy for me to stick to my aims and accomplish my goals* |  |  |  |  |
|  | 4 | *I am confident that I could deal efficiently with unexpected events* |  |  |  |  |
|  | 5 | *Thanks to my resourcefulness, I know how to handle unforeseen situations* |  |  |  |  |
|  | 6 | *I can solve most problems if I invest the necessary effort* |  |  |  |  |
|  | 7 | *I can remain calm when facing difficulties because I can rely on my coping strategies* |  |  |  |  |
|  | 8 | *When I am confronted with a problem I can usually find several solutions to the problem* |  |  |  |  |
|  | 9 | *If I am in trouble, I can usually think of a solution* |  |  |  |  |
|  | 10 | *I can usually handle whatever comes my way* |  |  |  |  |

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| **Innovativeness Scale** [Mueller, S.L. Thomas, A.S. (2001) Culture and Entrepreneurial Potential: A Nine-Country Study of Locus of Control and Innovativeness. *Journal of Business Venturing. 16, 51-75*] | | | | | | | |
| **33** |  |  | **Strongly Agree** | **Agree** | **Neither Agree**  **nor Disagree** | **Disagree** | **Strongly Disagree** |
|  | 1 | *I often surprise people with my novel ideas* |  |  |  |  |  |
|  | 2 | *People often ask me for help in creative activities* |  |  |  |  |  |
|  | 3 | *I obtain more satisfaction from mastering a skill then coming up with a new idea* |  |  |  |  |  |
|  | 4 | *I prefer work that requires original thinking* |  |  |  |  |  |
|  | 5 | *I usually continue doing a job in exactly the way it was taught to me* |  |  |  |  |  |
|  | 6 | *I like a job which demands skill and practice rather than inventiveness* |  |  |  |  |  |
|  | 7 | *I am not a very creative person* |  |  |  |  |  |
|  | 8 | *I like to experiment with various ways of doing the same thing* |  |  |  |  |  |

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| **Holland Occupational Themes** | | | | | | | | | | | | |
| 1. Review the traits, skills, interests, jobs and abilities under each occupational area and tick next to the words in each column that describe or appeal to you.  2. Count up your ticks in each column and write the totals in the boxes below. The two or three types you scored highest on make up your Holland type. | | | | | | | | | | | | |
|  | **Realistic** | **√** | **Investigative** | **√** | **Artistic** | **√** | **Social** | **√** | **Enterprising** | **√** | **Conventional** | **√** |
| **Traits** | Scientific |  | Scientific |  | Broad Interest |  | Helpful |  | Capable |  | Organised |  |
| Mechanical |  | Analytical |  | Expressive |  | Enthusiastic |  | Good leader |  | Practical-minded |  |
| Quiet |  | Intellectual |  | Dreamy |  | Friendly |  | Assertive |  | Shrewd |  |
| Reserved |  | Inquisitive |  | Idealistic |  | Kind |  | Enthusiastic |  | Speculative |  |
| Unassuming |  | Mechanical |  | Imaginative |  | Persuasive |  | Extroverted |  | Conforming |  |
| Practical |  | Scholarly |  | Intellectual |  | Insightful |  | Persuasive |  | Conventional |  |
| Nature loving |  | Broad Interests |  | Non-conforming |  | Sincere |  | Power seeking |  | Conscientious |  |
| Problem solving |  | Precise |  | Original |  | Trusting |  | Shrewd |  | Efficient |  |
| Athletic |  | Thorough |  | Rebellious |  | Understanding |  | Sociable |  | Neat |  |
| Action/ Present oriented |  | Independent |  | Sensitive |  | Generous |  | Confident |  | Stable |  |
| Common Sense |  | Original |  | Intuitive |  | Receptive |  | Persistent |  | Thorough |  |
| Honest |  | Future Oriented |  |  |  | Sociable |  | Adventurous |  | Accurate |  |
|  |  |  |  |  |  | Warm |  | Ambitious |  |  |  |

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|  | | | | | | | | | | | | | |
|  | **Realistic** | **√** | **Investigative** | | **√** | **Artistic** | **√** | **Social** | **√** | **Enterprising** | **√** | **Conventional** | **√** |
| **Skills and Abilities** | Mechanical ability |  | Mechanical |  | | Artistic talent or knowledge |  | Interpersonal |  | Leadership |  | Record keeping |  |
| Technical ability |  | Intelligent |  | | Foreign language ability |  | Teaching |  | Selling |  | Statistics |  |
| Athletic ability |  | Academic |  | | Design ability |  | Training |  | Promoting |  | Clerical |  |
| Using machines |  | Research |  | |  |  | Social |  | Educational |  | Business |  |
| Horticulture |  | Mathematical |  | |  |  | Educational |  | Business |  | Scheduling |  |
|  |  | Science minded |  | |  |  | Leadership |  | Clerical |  | Mathematical |  |
|  |  |  |  | |  |  | Selling |  | Interpersonal |  |  |  |
|  |  |  |  | |  |  |  |  | Public speaking |  |  |  |

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|  | | | | | | | | | | | | | | |
|  | **Realistic** | **√** | **Investigative** | | | **√** | **Artistic** | **√** | **Social** | **√** | **Enterprising** | **√** | **Conventional** | **√** |
| **Work Interests** | Working with things (e.g. tools, machines, animals) to achieve tangible results. Often involves building, fixing things, or working with hands. |  | Working with data to explore ideas, analyse possibilities, solve or study problems. | | |  | Working with ideas to create new products or processes. Often involves writing, acting, singing, photography or design. |  | Working with people to help or develop them. Often involved teamwork and close contact with others. |  | Working with people and data. Often involves meeting, leading or persuading others or negotiating decision making and politics |  | Working with data involving numbers, records, or machines in a set and orderly way. |  |
|  | **Realistic** | **√** | **Investigative** | | | **√** | **Artistic** | **√** | **Social** | **√** | **Enterprising** | **√** | **Conventional** | **√** |
| **Jobs** | Aircraft controller |  | Biologist | | |  | Designer |  | Teacher |  | Sales manager |  | Bookkeeper |  |
| Cook |  | Chemist | | |  | Photographer |  | Clergy |  | Business exec |  | Banker |  |
| Truck Driver |  | Physicist | | |  | Composer |  | Nurse |  | TV producer |  | Tax expert |  |
| Plumber |  | Engineer | | |  | Musician |  | Counsellor |  | Buyer |  | Accountant |  |
| Surveyor |  | Technical writer | | |  | Film director |  | Psychologist |  | Lawyer |  | Actuary |  |
| Mechanic |  | Computer analyst | | |  | Writer |  | Physical therapist |  | Reporter |  | Insurance clerk |  |
| Electrician |  | Professor | | |  | Editor |  | Librarian |  | Financial planner |  | Computer operator |  |
| Printer |  | Web designer | | |  | Actor |  | Social worker |  | Estate agent |  | Court reporter |  |
| Farmer |  | Audiologist | | |  | Graphic artist |  | Speech pathologist |  | Entrepreneur |  | Office clerk |  |
| Police officer |  | Dietician | | |  | Architect |  | Community service director |  | Foreign services officer |  | Para legal |  |
| Forester |  | Pharmacist | | |  | Trainer |  |  |  |  |  | Administrator |  |
| Optician |  |  | | |  | English teacher |  |  |  |  |  |  |  |
| Pilot |  |  | | |  | Translator |  |  |  |  |  |  |  |
|  | | | | | | | | | | | | | | |
| **Greatest Ability In** | Mechanics |  | | Science |  | | Arts |  | Human Relations |  | Leadership |  | Business |  |
| **Total Ticks** |  |  | |  |  | |  |  |  |  |  |  |  |  |

**My Holland type is (circle): Realistic Investigative Artistic Social Enterprising Conventional**

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| **Entrepreneurship** (A Cross-Cultural Approach to Understanding Entrepreneurial Intention.)  *Moriano et.al. (2012) Journal of Career Development* | | | | | | | | | |
| ***Attitudes towards entrepreneurship:*** *Please indicate how desirable are they for you in your everyday life* | | | **Totally Undesirable** | **Undesirable** | **Moderately Undesirable** | **Neither** | **Moderately Desirable** | **Desirable** | **Totally Desirable** |
|  | 1 | *Facing new challenges* |  |  |  |  |  |  |  |
|  | 2 | *Creating new jobs* |  |  |  |  |  |  |  |
|  | 3 | *To be creative and innovative* |  |  |  |  |  |  |  |
|  | 4 | *Obtaining high incomes* |  |  |  |  |  |  |  |
|  | 5 | *Taking calculated risks* |  |  |  |  |  |  |  |
|  | 6 | *To be my own boss (independence)* |  |  |  |  |  |  |  |
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| --- | --- | --- | --- | --- | --- | --- |
| **Strengths** | | **Strongly Agree** | **Agree** | **Neither Agree/**  **Disagree** | **Disagree** | **Strongly Disagree** |
| 1 | I have a good ability in visual and spatial strengths |  |  |  |  |  |
| 2 | I think in pictures rather than words |  |  |  |  |  |
| 3 | I can solve problems in unusual ways |  |  |  |  |  |
| 4 | I can visualize objects from different perspectives |  |  |  |  |  |
| 5 | I am musically and/or artistically inclined |  |  |  |  |  |
| 6 | I see the big-picture on tasks I am undertaking |  |  |  |  |  |
| 7 | I create unique methods of organizing things |  |  |  |  |  |
| 8 | I have good long term visual memory |  |  |  |  |  |
| 9 | I develop my own ways of problem-solving |  |  |  |  |  |
| 10 | I am mechanically and/or technologically gifted |  |  |  |  |  |
| 11 | I like to take things apart and see how they work |  |  |  |  |  |
| 12 | I am very creative |  |  |  |  |  |
| 13 | I can predict when things are going to happen |  |  |  |  |  |
| 14 | When I see that something is not working I try and find a way to fix it |  |  |  |  |  |
| 15 | I can view an object and imagine it from multiple angles. |  |  |  |  |  |
| 16 | I have a good imagination |  |  |  |  |  |

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|  | | | | | | | | | | | | | |
| **Values (*Adapted from an exercise by the Career Action Centre, Cupertino, California. www.careeraction.org)***  Values are principles or standards that you feel are important in your work. Values are an important part of career exploration, partially because they relate to motivation. (Brown and Brookes 1996)  This exercise will help you to identify values important in your future work.  **Select 8-10 values that are most important to you.** | | | | | | | | | | | | | |
| **1** | Helping Society |  | **10** | Achievement |  | **19** | Stability/routine |  | **28** | Respect |  | **37** | Financial gain |  |
| **2** | Helping Others |  | **11** | Advancement |  | **20** | Varied work |  | **29** | Security/stability |  |  | |
| **3** | Fairness |  | **12** | Prestige |  | **21** | Knowledge |  | **30** | Fun |  |
| **4** | Honesty |  | **13** | Recognition |  | **22** | Adventure |  | **31** | Personal Balance |  |
| **5** | Working with others |  | **14** | Competence |  | **23** | Creativity |  | **32** | Aesthetics |  |
| **6** | Working alone |  | **15** | Authority |  | **24** | Belonging |  | **33** | Artistic expression |  |
| **7** | Integrity |  | **16** | Power |  | **25** | Teamwork |  | **34** | Work environment |  |
| **8** | Interdependence |  | **17** | Competition |  | **26** | Open communication |  | **35** | Tradition |  |
| **9** | Autonomy |  | **18** | Challenge |  | **27** | Friendship |  | **36** | Community |  |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Exercise 3: Qualities**  1) Review the qualities and mark the ones that best describe you | | | | | | | | | | | | | | |
|  | Accurate |  | Competent |  | Efficient |  | Imaginative |  | Orderly |  | Relaxed |  | Trusting |  |
| Adaptable |  | Competitive |  | Eloquent |  | Independent |  | Organised |  | Reliable |  | Trustworthy |  |
| Adventurous |  | Confident |  | Empathetic |  | Individualistic |  | Original |  | Reserved |  | Tactful |  |
| Alert |  | Congenial |  | Energetic |  | Industrious |  | Outgoing |  | Resourceful |  | Understanding |  |
| Ambitious |  | Conscientious |  | Enterprising |  | Informal |  | Painstaking |  | Responsible |  | Unexcitable |  |
| Analytical |  | Conservative |  | Enthusiastic |  | Ingenious |  | Patient |  | Responsive |  | Uninhibited |  |
| Articulate |  | Considerate |  | Ethical |  | Innovative |  | Peaceable |  | Retiring |  | Verbal |  |
| Artistic |  | Conventional |  | Fair-minded |  | Intellectual |  | Perceptive |  | Self-starting |  | Versatile |  |
| Assertive |  | Cooperative |  | Farsighted |  | Intelligent |  | Persuasive |  | Sensible |  | Vivacious |  |
| Attentive to detail |  | Courageous |  | Firm |  | Kind |  | Poised |  | Sensitive |  | Warm |  |
| Authoritative |  | Creative |  | Flexible |  | Leisurely |  | Polite |  | Sharp-witted |  | Wise |  |
| Bold |  | Curious |  | Formal |  | Light-hearted |  | Positive |  | Shrewd |  | Witty |  |
| Broad-minded |  | Daring |  | Frank |  | Likeable |  | Practical |  | Sincere |  |  | |
| Businesslike |  | Deliberate |  | Friendly |  | Logical |  | Precise |  | Sociable |  |
| Calm |  | Decisive |  | Frugal |  | Loyal |  | Progressive |  | Spontaneous |  |
| Candid |  | Democratic |  | Generous |  | Methodical |  | Prudent |  | Stable |  |
| Careful |  | Dependable |  | Gentle |  | Meticulous |  | Purposeful |  | Stalwart |  |
| Cautious |  | Determined |  | Good-natured |  | Mild |  | Pressure-resistant |  | Steady |  |
| Charming |  | Dignifies |  | Gregarious |  | Open-minded |  | Punctual |  | Teachable |  |
| Cheerful |  | Diplomatic |  | Healthy |  | Opportunistic |  | Productive |  | Tenacious |  |
| Clear-thinking |  | Eager |  | Humorous |  | Optimistic |  | Quick |  | Thoughtful |  |

## Appendix 6: Interview Transcript 1

**7th March: Interview using IPA**

*[Participant was given interview transcript day prior to interview to read and familiarise. Interview was done in participants own home in response to where they preferred.]*

***S: (Interviewer) D: (Interviewee)***

S: So what I'll do is I will just read through the first page "My name is Sara Agahi"

Were you ok with the questions? Is there anything you want clarifying?

D: No they are fine, what I found was that I was answering a different question, so you will just have to interpret what I saw. You can jump onto the next question if you have not read it

S: Yes sure well, I think that they are all very interlinked in some ways so it's not so much about answering the question but having an open discussion about it and learning from you about your experiences and what I can learn about dyslexia and the aspects of strengths from your perspective really. So we will begin. My name is Sara Agahi I'm a doctoral research student at the Institute of Work Psychology, supervised by Rod Nicolson. My research is on dyslexia in the workplace with the intention of trying to characterise the professions and roles that are well suited to adults with dyslexia and in due course to better adapt the working environment to allow adults with dyslexia to demonstrate their true capabilities. So in the past there have been approaches to looking at dyslexia, as identifying the weaknesses and helping them improve them somewhat. There is now a major new field called positive psychology, which takes the opposite approach and identifies what one’s strengths are and trying to adapt one’s life so as to work to ones strengths as rather one's weaknesses. So that's the idea of the question. So getting started. We will begin with your own experiences of having dyslexia.

*Would you please share your experiences of having dyslexia? When you were first diagnosed?*

D: Right so I will just speak. [Pause] I didn’t know I was dyslexic at school or as a child, I didn’t know the world no one was looking for it, it more or less didn’t exist. At school, I struggled, I wasn’t happy, I liked the weekends and the holidays; I was happy at home but at school I just didn’t like it. And I don’t really remember not being able to do the work or being able to read. What i so remember is not being and not knowing where I was supposed to be, I was just lost in the school environment, everyone else seemed to know where they were supposed to be and what the next lesson was, and I just had no idea. I failed my 11+ which then was a sentence to failure. But my parents, who always seemed to believe in me, sent me to a private school. So between 11 and 13, they struggled to send me to a private school, but the classes were smaller, it was friendly and I began to like school and what they did at this school was to teach for an examination, an entrance examination to the central technical school which existed in Sheffield, and this was the 13+ school which did a 3 year engineering or building course. And so I passed this entrance exam, and most people who went to this school did, because they taught this exam. I went to the centre technical school which was a very traditional school, a very good school, where we did a wide range, 13 subjects as well as English, engineering and history etc. and whilst I was in the lowest form. There was in 5a, b and c and I was in 5c, I did 6c which was the lowest one, I quite enjoyed the school and really did quite well [surprised tone] , even though I was at the bottom end. Some of the kids there went on to do GCSE/ or GCE's as they were then, but I didn’t, I wasn’t good enough. But at the end of the three years, we took an exam and got a diploma if you passed or only just passed, or you could get a second class diploma or a first class diploma. I got a second class diploma which was equivalent to 5 GCE's which entitled me to go onto further education and miss out all of the preliminary years; I got to that threshold level. By then I was beginning to be known as a late developer.

S: *So still not a term given and being recognised as dyslexic?*

**(7:00)**

**D:** Yes people who didn’t develop till later, which was in a way true, but I think the dyslexia was the reason for it. I went on to do further education and did a day release. I left school at 16 and I had got the equivalent of 5 O-Levels and went on. I got a job in the steel works at Brown's in the Pyro Lab. I didn’t want to go into engineering, but the laboratories interested me and sounded a bit more exciting and indeed it was so I was learning instrument maintenance and learning how to maintain and look after all the instrumentation which looked after temperature measurement in these huge furnaces. At college, did day release and evening classes towards a city in Googles course which I got through, I passed through every year and got the advanced level. That is as far as I went in my education. I think I had achieved that at about 21 or 22. So and there was still, there was no indication of dyslexia, no talk of it and it was always felt that I was a bit slow and I always thought I was a bit slow and not very bright. I had to work a bit harder than the rest. After 4 years I left the steelworks and went to work at Sheffield University to work as a technician and I worked in the electronics workshop because that was what, electronics was gathering momentum then, it was interesting. I struggled with electronics, I did some courses, and after 4 years there, I went to work for a big American company in sales. [Pause] I had come across there instrumentation in the steel works and it was like the Royles Royce, and I really did want to work there. I was uncertain about even applying for a job there because it was such a magnificent company. I went on to work for 34 years there.

**(10m.10s)**

When I wrote my application, they sent me an application form, and I filled the application form in copperplate writing, no computers or word-processers or anything and my writing is appalling, and when I was at college, because my writing was appalling I decided to change it, I bought myself a 'teach yourself handwriting' which taught Italic writing, which was not a good idea if you are speaking to a dyslexic people, because and for a time we had to make notes, we had to make notes from the board, and I could neither write in my scribble writing or in my new writing. For a time I was unable to function properly because I was trying to change, but now I have developed, I can now write beautifully, or not. This is part of the smoke-screen that people with dyslexia use, to cover up the fact that they are shoddy and untidy and misspell in the written work dyslexics produce. [Pause] At work I struggled, at first at this company called Honeywell, I started as an inside sales engineer, answering the phone and answering technical enquiries, and at first I was even nervous of answering the phone and I didn’t know who it was going to be and what questions there were going to have, I had to write letters, I had never written letters before. So it was very difficult for me to do, but I did it then began to enjoy it, and later got an outside position which means I got a company car and travelled around and visited customers. That was also enjoyable.

But then we had out second child which was a boy, and after, he went to school, he was a bright, lively boy *full* of words and language and liked to tell a story, but and he started, and began to wake up in the night with pains in his legs, and something was wrong and we weren’t sure what it was. We took him to the hospital and had physical tests- absolutely nothing. We saw a clinical psychologist who said, 'this child is classically dyslexic'. This was 30 odd years ago. I had been about 35 at the time, and dyslexia came into our lives and we didn’t really know very much about it and we started to talk the school and it became apparent that they didn’t know very much about it either. We eventually saw an educational psychologist, who we didn’t want to see but Mathew, our son was referred to him and he didn’t believe in it. In fact we knew more about dyslexia than he did. It was this time that Angela got interested, went to the University, did certificate courses, then did her degree, then did her PhD then became a world authority in dyslexia. Shortly after we found out about Mathew, we came to a realisation that, perhaps I’m not slow, perhaps I have dyslexia, this was an interesting thought, because I can read and I can write beautifully now, given time, so we weren’t sure. Then I was tested by one of Rod's PhD students and given a full test, and I was absolutely amazed, not because I came out dyslexic with the profile, but because my intelligence was not to be sneezed at. I was at a high level and that was the first time in my life, I wasn’t slow, I wasn’t, that realisation was good and I could have done with those years ago. It made me happy and relieved. Now I had known years before this that I had to get up for work early, put alot of preparation for things I had to do, plan ahead and I knew things took me longer to do things. But to have a reason for it was good. In some of your questions which I suppose, we can look through, we are now moving through.

***S:*** *Yes we are. How do you feel you were perceived by others and yourself before and after.*

*Prompt: Did you use to worry about what people saw of you?*

**D:** Yes I worried I was aware of it and I still do, and I never used -well onto latterly in the work environment did I use the fact that I was dyslexic, but it was only because of a very very strong sense of knowledge about dyslexia and I was nearing the end of my career because many people don’t and it really is difficult and it is not understood.

***S:*** *Did you feel after your diagnosis then that you were able to tell people easily, when they got to know you.*

**D:** Yes yes because we talk alot about dyslexia in our lives, we go to conferences and all of these things, we talk about Mathew being dyslexic and I’m quick to say now and of course 'I am!'. I was really whilst I struggled at school and struggled all the way through my work career; I was quite successful as a salesman. At Honeywell, the organisation I worked for, they would give prizes to sales people. They wouldn't give you money but they would give you a plaque and 'salesman of the month and quarter' in the hope that it would spur us on to greater things and I accumulated many of these things, and the highest accolade for the people in Honeywell was to get nominated for something called the 'president's club’ because the chief executive of the company is called the president. In the presidents club they would nominate people, if you were nominated it was really really good, you would get sent away on a week’s holiday somewhere, just for being nominated, somewhere in Europe with others. If you were elected out of the people who were nominated you were elected to the presidents club, people from all over the world would converge on Puerto Rico, with their wives, for a very special week of thank you and celebration which was great and I was nominated 5 or 6 times and twice, did I make president's club, and to make it twice was really really good, that’s what the American's call a 'two timer'- we use the term in a different way don’t we? So I must have been successful in making all these plaques.

***S****: You must have been talented, in the work you were doing in order to make that progress, the fact you got promotions, you must have had real capacity for that particular role. Do you think you showed particular skills?*

**D:** I became a sales manager, like a regional manager in different grades of manager, and when you look at dyslexic people in their occupations, the ones that do well are either in management or in sales and I was in both, so it falls nicely into a category in which I could succeed.

***S:*** *So that must have made you want to stay on at the company, did you feel safe in that particular job?*

**D**: I knew what I was doing; it was a good and caring company. [Pause] I felt a bit trapped, I never earned megabucks, but I earned a decent salary, it didn’t pay huge amounts, and it went up a bit each year. But It was hard, sales environment is hard, I sometimes felt I wanted to be in a job that was more directly involved with people all the time, also face-to-face, but helping people, social work, or something where I made a difference in the world, rather than make a profit, for a big American multi-national company, so I really felt I could have been doing something more worthwhile, but I couldn’t because I had no qualifications to speak off. Because I was in this organisation, I had worked myself up to a sort of middle-management level, I couldn't leave. So there was an element of enjoying it, being successful but also feeling trapped. In fact I took early retirement at 58, and the company enhanced my pension, and also I had some very very big important customers, some million pound customers and they, so I took early retirement but what the company said to me was, what we can do is also give you redundancy, but you must not tell the customers or your colleagues, because it’s not redundant position but we want to sort of say thank you. This was really really nice.

***S:*** *So they also therefore recognised your commitment.*

**D**: Yes, I couldn’t believe it when I said, I was thinking of retiring at 60, that was two years before, I needed to tell them, and my customers are so precious that they will need to transfer, all of the specialist knowledge over two years and they said, well would you like to go earlier? I did and I was very pleased to go because technology was changing, I was using a computer, emailing everybody, producing charts and PowerPoint presentation and just managing to do it as I am at an age when it does not come easily. So there are young guys who have no problems with these things but I was beginning to struggle, and getting to the stage where, they are going to find me out. I’m earning alot more than all these people who are reporting to me, and they are going to find me out, and so there was, I needed to leave. Because I suppose I was old, but I felt alot was to do with dyslexia, it was difficult; it takes longer to do things. Some of these questions, we can come onto.

***S:*** *You have explained the experiences at work and school. There is working conditions that were challenging, you mentioned the technology, did you find that there was reports to be done etc?*

**D**: I found that things needed to be done instantly and whilst you have instant access through the internet, in order to prepare a report, I need time. Dyslexic people need time [emphasis]. So deadlines were a real problem. I used to ask, ‘*please could you give me a warning, can you give me time’*, because you would get a call late one night, ‘*Tomorrow could you give me this report?'* I would need at least 3 hours and would have to travel. Tight deadlines were difficult. Also the first thing I have written here, I was a prompted, 'difficult areas of work' was that they put me, at one time I had an office, I could close the door and get on with things, we moved and I was in an open plan office. I could not function. I could not function. I couldn’t speak on the phone because I couldn’t hear to what people were saying. I couldn’t read anything because I was distracted and then I started to work from home and that was alright, but open plan offices are very difficult. I thought about having headphones, white noise, to try and get over it.

**S*:*** *So did you find that with the response, say for a deadline etc, any challenging problems, did you find yourself having any particular type of coping mechanism to cope with them?*

**D:** Yes I did [pause], time was the enemy, I’m totally disorganised, and lack of organisation is one of the things, and I am no different from anyone else, particularly dyslexics, so time management was particularly difficult and I needed more time to do anything really well. So I would get up early, I would be in the office early and I would plan my day, do all the things in the previous day I hadn’t done, I would do reports, and those sort of thing, I would also bring stuff home, intending to do it in the evening but didn’t do it, it’s something we all do. But getting up I could do, and made time. So if I had time I felt I could do those things.

***S****: What about when you were reading? Did you have a learning style?*

**D:** I can’t read quickly, if I have to scan something, I can’t do it. So when I went into a meeting they would say, *'oh could you just quickly read this'* and I would find that horrific. So people would read it very quickly and start to talk about it, so that was very hard.

**(31:29)**

***S:*** *There is also the phrasing there saying ' dyslexics they learn difficult'. They learn in a different way. Did you have a preferred learning style?*

**D**: I don’t really know about learning styles. I have put here note taking. I don’t have a memory, my memory goes. So if I attend a meeting or something thoroughly enjoy it come out and think, I couldn’t say what happened in that meeting. But if I just make the odd note I will know what happened, so I would write things down when I have a conversation on the phone or with customers in an interview situation, I would say *'would you mind if I just make a one or two notes',* and next time we met I knew exactly what had gone on before and there wasn’t a problem, and in that way, I found I was better probably, than people who hadn't taken notes, and no one could remember everything and certainly not for a month and moved on with a further month. Often it was a month before you met someone again and moved forward with some negotiation. I still have some of my diaries, with notes in, and also if I was going to visit a company I would spend a whole day preparing, and in my diary I would have *‘Mr so and so, 10am, lunch at.......’.* If I had not got them written down I wouldn't have known. And I had also written down my actions, a plan for a week for a year whatever and know where it was and be able to access it and move forward. I still make notes when on the phone of shopping of things that have to be done. What I also used to do was, some years ago, driving back from having spent a day with a customer and talked about all sorts of things, I would record my thoughts and things I had to do, whilst driving back and I found that great because I had to do reports to the company on how things were every week. These notes were invaluable; it was ‘how did you think it went today, and what they said’, and this sort of thing. I could then revisit it and I had everything I needed so that was a technique. It worked. I found ways to overcome.

It would be that I would spend a day with someone and then come and away and lose half of the essence of why you were there and what they said, because it does go, little snippets about the competition of how they failed in some awful way. The company needs that information to feed it, and they love to know where they fit in.

***S:*** *It is recognised that a dyslexics mind work difficulties, visual thinkers, I have been trying to make sense of what half of those mean, 3D thought, intelligence, strategic thinkers, spatial skills. When you hear these do you think there is a relationship between them?*

**D**: Yes I do, I think differently, it’s difficult always to put it in words. Once I have got the facts of a problem, something, then I can see the solution. I don’t necessarily need a chart of pros and con’s and weights them and all those things, I know what the answer is. Now I'm not always right (laughing) but very often I am. In fact, we had PDR's (personal development reviews) because it’s an American company it was ahead of its time, so every year, and again we were judged based on this review and I struggled, I would get comments that 'personal organisation is poor', 'reports were late'....[pause] What was I going to tell you? You see this is another thing about dyslexia, suddenly, blank wall! Perhaps I have written it down.

**(38:02)**

Yes that’s right, PDR's they would give an insight into how people performed, what they did and what they did less well, and areas that they excelled in, and one of my managers, senior managers put in, that I had the ability not to foretell the future, but to see how events were going to pan out in the end. I had this ability to predict how things would work, and he valued that fact that I could advise him, that this is a difficult situation, we are doing this, and the results are going to be that. I didn’t know quite how he phrased it, but he could see that this was a quality of mine, and something which is a bit special isn’t it!? That really looking at what the events were leading up too, we could see the consequences of this action, and this is going to happen if we’re not careful.

***S****: Would you say these were based on experiences you had seen before?*

**D:** I don’t think so, I don’t know, how do you know? But the fact he said it was really good, and to put it down. It really was recognition. [Pause] It is not an instant thing; I need all the information to be able to come up with answers or solutions. I can’t help, trying to find a simpler solution to what’s happening, I can see very easily, what the solution is to this huge deficit we have in the UK at the moment and it’s not, taxing the poor or taking wheelchairs away from people, I can see this, (Laughing), so I would look for easier simpler solutions to things and try to find a way.

***S****: So we can now go to the idea of creativity and dyslexics, some of the questions I had were overlapping and we can see this now from our conversation.*

**D**: One thing is also that I never read aloud, because I stumble, I get words wrong, it’s so embarrassing, I don’t handwrite messages, and I can’t spell some of the simplest words. I find I have to rephrase some of the words I'm saying so that I can use words that I can easily spell and be certain off. On spelling, one of the things answerably I was asked to do by Angela, was to give me a spelling test and I have dozens of spelling tests, but she said, '*ok this time spell these words, and she said how many of them have you got right?*'. I knew some of the right but some of them I wasn’t sure whether they were right or wrong, but I got something like 18/20 right, but the interesting this was that I didn’t know they were right. this is the thing, I know I can spell, although not very well, but it’s not just confidence, it would be that I spelt it a rather different way, say with 1 L rather than 2, and that might have been right, but I remember the number of times with the words I needed to use regularly like 'colleague' I would rewrite it over and over again, couldn’t spell it, but I found out that this was how it was spelt and I learnt it. Not I couldn’t tell you though I wouldn’t know if I had spelt it correctly.

**(45:23)**

***S:***  *Have you found a way to avoid tasks which can highlight your dyslexia?*

**D:** I now can ask for documentation in advance if at all possible, or if I was going to a course I would ask for notes, that’s what I would do, or use handouts, yes I would. So I have found ways to cater to what I need.

***S:*** *Strengths questions (he took the lead I didn’t ask the questions but they were:*

*Can you give examples of the way you have used the strongest aspects of your dyslexia to overcome barriers in the workplace? Do you gain new skills and strengths in working around difficult areas and coming up with alternatives?*

**D:** What I have written down here, just a little note, I have written down empathy, In my job as a salesperson, I think in your job as anything, if you have a strong degree of empathy then it helps. It helps immensely. Certainly with sales, and I think that being dyslexic, its hard and it’s like hardship building character, so I think that the fact that you have been told that you are stupid and slow and all of those things, you know how it feels and we all have difficulties in our lives and so understanding it and seeing people as people with their vulnerabilities is a good thing, and it may be a positive thing coming through all the difficulties. I recognise it as a key thing.

**S:** *So you feel empathy is a key part taken from your dyslexia, how did you find this worked within sales*?

**D:** People have to make a decision to go along with purchasing, so you have to reinforce their decision to spend millions of pounds on your controls as a very good decision. The only way you can do that if it is a good decision and a right one for them, so I did believe in the product totally and I always say the secret of my success was- trust, because if you putting your job on the line and you are spending millions of pounds of someone's money, you have got to totally trust the organisation that you are dealing with, because you don’t want them to let you down, otherwise you look foolish, because your life if going to be difficult if they can’t deliver in any way and so trust is the big thing in the organisation. I did have all sorts of problems with the organisation because we had brought stuff in from Japan and Holland and Germany and all sorts of places, and the process for getting it there on time, and the right quality and everything, was difficult. Now they didn’t see that and I had to make it happen for them, so that is why it was a difficult, difficult job. So I had to provide them with a front man to the organisation who they could trust.

***S****: It’s nice to hear you are such a key part and you were recognised and you know you are good in the position you were in.*

**D:** Yes it was immensely gratifying, and that’s why I was shocked that when I said i’m thinking of retiring in two years, they said, well you can go now if you want?

***S:*** *There is a part about coming up with difficult areas and number 4, aspects of dyslexia that could be considered strengths. Do you have any more ideas on what you think could be considered as strengths?*

**D:** It’s difficult to say, because you don’t know what you do that difficult to other people. I think the fact I went to a meeting prepared helped enormously. I was ready at these meetings, but if I had not got it written down. Again this is a dyslexic thing, the number of times I have said that there are a number of things I could have in my mind to say, but after number 1, it’s gone, totally gone and even in writing letters I would think about what I was going to say, it had completely gone halfway down the first paragraph, so I would write down words in the top left hand corner. You can see them as bullet points but you just can’t get the information out and you know you have these ideas and you want to impart information and you can’t because it is gone.

These are all gems aren't they!

**(52:50)**

***S****: Creative side, do you have one?*

**D:** Well latterly I have become an artist; this is one of mine (points to an aboriginal picture). It’s out of this book; it is a copy of it! Having the realisation that you can achieve something if you want too, you can achieve almost anything. Given this is the most beautiful picture, it took me hours. So I could do as well as anyone! (He has more and showed me, beautiful pictures and he loves talking about them). This is the creative side; I can given enough time can produce something quite magnificent. It is the realisation that anyone, however difficult they find things or have a blunted ability to write or, they can do it anyone can do anything almost. That is an interesting realisation. I love doing art. (He went to evening classes).

*BREAK (3minutes)*

*(Highlighted wording on consent form- he didn’t go to university and he is not working)*

**(1:01:01)**

**D**: I’ll just say this while it is on my mind otherwise it will go, was that it is important to have this realisation that anyone can do anything, that you can do wonderful things. This is something that every now and again an individual needs to be told this because they won’t realise this themselves and they need people to have faith in them and have confidence in them, and to be told that look you have this ability like the first guy that tested me and said look, these are the scores and you are here. It is good to know that and be told that, and this is how these people at this level of intelligence are. Also even without an IQ test to be, like my parents had faith in me, they knew I was able to do all sorts of things. They could see beyond this child who had a miserable report and blotted horrible work that he was handing in, and so I had an also a Sunday school teacher who could tell, and who made me feel special. It is nice, because at school they would say, right read a passage from Shakespeare, and you would look at all people as it is going around the class and you were thinking, now I’m going to be reading somewhere around here, I’m not going to listen to what they are reading I’m going to read this so I can do it, so you miss all the essence of what is being read and your trying to work out what will I be reading here and try to look at the words and pronounce the words and see what it means so that you could read it meaningfully instead of stumbling through reading it word by word, so the number of times in an English lesson I would miss repeatedly what it was about it was about it, trying to make sure I wasn’t going to look stupid when I was asked to read. At Sunday school we were reading bits of the bible and I found that I was in exactly the same position trying too and then stumbling through it and this guy never asked me to read aloud again or never read aloud again, because what is the point? And seemed to take an interest in me and see me as a person. But I think also, being married to someone like Angela who would have confidence in me, she would say 'yes you should apply for this job' ~'yes you can you’re as good as all these other people' so encouraging me to do things.

***S:*** *In times of difficulty or when experiencing disappointment do you manage to overcome obstacles and move on? Can you draw from any experiences from where you can share how you managed to do it?*

**D:** What came to mind here, is that this is a customer who had totally rejected the company, my company one or two things had gone wrong, and inevitably they do go wrong, they said this is no good and we want to move, all these millions of pounds worth of business we are going to move it somewhere else, and I had to hang onto this business and it was important to the organisation, and I was given the job of doing that. I think, one of the ways that I did it was, my behaviour suggested that they were going to stay with us, they were going to give us the business, we were going to respond in a partnership role and work with them, be led by them, do everything that they wanted us to do and assume in my dealings with them that everything was going to work out and we were going to be supplying them with the controls, and so it was a role, performing this role, and assuming that the right thing would happen, and it did, it worked, now whether that is a good life strategy and this is something that tried and it worked.

***S:*** *Do you feel that well as a response to the dyslexia it sort of makes you think that well this has happened to me and I can move on?*

**D:** I don't know I can’t say absolutely. I would always would get frustrated, I still can’t read properly, I still can’t write properly, it is always there, you get strategies and things and you can develop ways such as making notes which make you better than the average guy which is good.

***S:*** *What would you say to anyone who just found out or thinks they have dyslexia and feels they cannot be successful.*

**D:** I would say, find out what you want to do, set out your objectives, take it one step at a time, same for everyone really but start with the first hurdle, be positive and I think be open about dyslexia, and I wasn't not until very very late in your career when really I had very little to lose. Because it’s not easy to admit you have a deficiency, or knowing about dyslexia, it’s a 'difference' it’s not a deficit, we do things different. When in truth there are alot of things you can’t do at all, but it is a difference. And there are strengths although it’s not easy to find the strengths. I just hope that at the end of your research you are able to see what they are and how they can be found!

**(1.10.06)**

***S:*** *Last question do you feel you are able to apply yourself to things that maximise your skills and your interests into your work and leisure.*

**D:** Yes it is still not easy to do it, but after all these years I can still approach people, when you get to certain you age you can, but it is still there, it is a kind of insecurity. I’m not sure that is a good thing to say to a dyslexic though. If it’s identified at a younger age and someone can work to their strengths and be confident then yes I think it would be easier. When I was working I worked alot of the time, and in the evenings when I wasn’t working I felt as though I should have been working. My leisure time suffered and perhaps spending time with my family. Over all the years perhaps with all the time spent for the preparation for work.

**END: 72 mins**

## Appendix 7: Interview Transcript 2

**7th May : Interview using IPA**

*[Participant was given interview transcript 4 days prior to interview to read and familiarise. Interview was done in participant’s local library in response to where they preferred]*

***A: (Interviewer) S: (Participant)***

*A: Thankyou for agreeing to do this interview with me*

S: I am very happy to be a part of it

*A: This is part of my pilot study for my PhD research on the strengths of Dyslexia in the research. The reason I have asked you to be a part of it is because of the conversation we had at Changing Times which I thought was very inspiring when you told me that you were Dyslexic and that you would be happy to be a part of the interviews I would be conducting. So I will be reading through the questions, but like I mentioned to you it is better to view it as a conversation and discussion.*

*So first of all just looking at the experiences of having Dyslexia, this was just a general question that I put together because I feel that people do have a story that goes behind it to essentially set the scene.*

S: Yes sure, so I was diagnosed quite late with dyslexia, I just felt I was not as intelligent as the rest, or I was very poor at English, just an idiot basically, dumb or a slow learner and I had always been put in a lower class in English at school and being treated as if I wasn’t capable of doing great things, which was kind of a label which I just accepted and got on with and it was only until very late in the last years of my university degree that I was actually diagnosed.

*A: So going through school, was it anything that your parents picked up on or that you tried to hide?*

S: It was quite obvious; they would say that X is a weak speller in English that was all that they had to measure you. They had no other means of test scores in English, so they just saw that the work was full of spelling mistakes and kind of just labelled me as not a bright student and I was put in lower classes, the bottom classes. I was doing good in Science and Maths and other subjects like that but throughout all my written work you could see that my spelling was weak and it did kind of reflect that that was people see and the thing that people pick up on and it does have a negative impact on what people perceive in your work if it is littered with spelling mistakes so it was interesting around that time when we started using computers more it came to my advantage at school it was online or printouts.

*A: Did you find ways of covering up or avoiding things?*

S: Oh yes all the time, I would ask other people to write things up for me, I would carry a dictionary close to me, I would write as little as possible or use alternative words, or just summarise things rather than going into depth because the more I wrote the more chance there was spelling mistakes or grammatical problems, and I would always rub out my work, cross things out and start again and it would be really messy. So just minimising the amount of work, one word answers i would use to create shortcuts.

*A: So in terms of perceptions of others and of yourself, and going towards the diagnosis stage and university.*

S: I found that I was struggling alot generally in exams throughout my school career always not finishing on time, I always had an extra page to finish so I knew that I needed alot of time. As things were getting serious, I think the main deciding point was when I realised what I had to achieve from University, I needed a 2.1 to get a good job and this struck me quite badly, there was a turn around which made me think, what was wrong? Why am I not finishing my exams? What’s wrong with me? I had heard about dyslexia, I had looked around so I thought you know what, they have this free facility at the University, let’s go along and check it out. I had an initial interview with the learning support team and then a second interview and they referred me onto the Psychiatrist, who happily confirmed that yes you have strong signs of dyslexia and it was one of the most eye opening days of my life it really took a burden off me because I was cutting myself up for many many years, saying you know X, what are you doing? you aren’t going to achieve anything, you are going to struggle throughout your whole life, so it was in the last years which was excellent timing because I had the extra time in the exams and I actually feel that if I had not got the extra support I wouldn’t have got the final outcome in my degree.

*A: What was your final outcome?*

S: A 2:1

*A: Well done. Going into the degree and onto University was that something that school encouraged or was it more from you?*

S: I suppose I chose the subjects that were to my advantage, so I chose IT, Business, so everything was on the computer at that stage so I was kind of safe, in a safe environment, I didn’t have to do any pen to paper work, so I kind of forgot about it for a few years and it didn’t come up again until I did the written exams, then again I went back to the structuring of answers to minimise the content, to stop using big words and to use my own words, and like I said the issue was time, I would always run out of time and I became very worried and thinking if I don’t get the grades I need, this is going to affect my career, this is the big one.

*A: Would you say you were harder on yourself than people were harder on you?*

S: [pause] I was a lot harder on myself, my parents realised I was weak in English, and when I was around 14/15 they put me into private English tuition where the English tutor just helped me with my reading and spelling skills. Just breaking down spelling into basics. It helped to some extent but I don’t think she worked out I was dyslexic.

*A: So going back to the testing, what were the kinds of tests that they did with you?*

S: In high school, they did like a weekly spelling test and they rate the school students out of like 20 who were at the top half, so every week I was in the bottom. When I ever got any homework back it was in red. That was quite upsetting, I kind of didn’t realise what the whole point of the exercise was, it was so covered in all these spelling mistakes you didn’t see the meaning, you didn’t see the purpose of the homework because it was just covered in mistakes. They did do that in the science and history work which is I guess fair enough, they are trying to correct my mistakes.

*A: So the type of degree you did, what was it?*

S: I did a mixture of business and IT, I studied, Ecommerce degree. It was a 4 year sandwich course where you do a 1 year placement. There is a business dissertation, business analysis and a marketing strategy, reports, market research. There was alot of literature involved as well in the business side of things. I was quite comfortable at University, because I had alot of time, and I would spend more time than other people, absorbing the lecture notes, reading the material over and over again, because I was in charge of the way I studied. I took control of it and found ways and means of putting the work in. I know I had to put in more effort than everyone else did, I would have to work double the hours but I would get the same results as everyone else. Towards the end I was very comfortable writing dissertations, because I had time to read and re-read my own words, my own strategy. I could totally rule out dyslexia as a disadvantage that would hinder me in that process. I really felt I came to blossom towards the end of the degree when I found out. The only area I would still worry about were the exams because it’s all online, it’s all electronic.

*A: Can you share a bit more about how it felt when you were diagnosed?*

S: [pause] I felt very relieved, just to be able to think, X it's not your fault and, you have gained a lot in this learning process, it’s a shame it wasn’t done earlier but you have been very lucky that it has happened at the right time for you and changed your career and potentially helped me out a lot. I didn't tell anyone, I kept it to myself. I actually still today have not told my parents, if they ask I would tell them, I'm not hiding it I did mention it to my dad, he said yeh don’t worry about it, its genetic we are all the same you just need to work on it. But I guess the thing that they feel is that dyslexia means you can't read or write they don’t really understand. And I thought you know what they don’t need to know, If they ask then I’ll tell them. I just don’t want to burden them with the worry and then they would tell all their friends and everyone looks at me funny. It's no worry to them, its better. If I was in high school then fair enough but I’m at adult, I can take care of myself, they don’t need to know I didn’t feel the need to tell my parents. They always knew I had issues with spelling and they tried to help me, tried to give me some private tuition. But I have done well now so.

*A: So we have touched upon school. The working conditions you found particularly found challenging, you mentioned time, I think this is something that stems across the research. In terms of areas of work, could you explain a bit about what you do and the workplace in general?*

S: With the workplace there is also the application process which a lot of companies ask for IQ tests and things like that so as part of my degree I did an internship for IBM, and back then you didn’t have to do any IQ tests to get in. It was all verbal interviews and group exercises so I got in no problem. Only when I graduated they asked me to come back and they said, we would like you to do some IQ tests as well. I failed them miserable, I even told them I was dyslexic, they gave me an extra 20minutes but I still struggled with them, there could have been other aspects that didn’t explain why, but it can be a barrier towards getting a job even though they have a lot of respect for you, the dyslexia requirements are giving you a little bit extra time, sometimes you just might struggle with certain things. But if you are a strong candidate in other areas they would consider that so they were quite ethical in their approach in job applications. The job I’m doing now, I’m a software consultant with the NHS, so that involves working directly with doctors and nurses, finding out how the current systems work and then designing something with the in house software and delivering that over a period of two years, based in the city, I work with a very big team. I like my job, very people orientated, working with a diverse range of people, presenting to a lot to big audiences, training people who are very slow at using computers in hospitals so I have a lot of patience with them, been doing that now for 2 and a half years.

*A: So do you feel there are particular skills or strengths that you can say why that job is good for you or that you are well suited to that job?*

S: A couple of the skills I think I developed because of my dyslexia is patience and the ability to get different perspectives, trying to see things through other people's eyes so I think that ok maybe they need to learn in this way or maybe they have this strong feeling inside them that you might not come across, having patience with someone asking why they feel certain ways or understanding the background really helps in my job. And you have to communicate through email quite a lot and its quite easy to mis-communicate and address people if you don’t address things properly or you don’t take into consideration all their thoughts and feelings and history, so I do have a lot of patience and I’m very persistent to get people's full understanding before I propose any new ideas or new systems to go into their hospital.

*A: So in terms of working conditions now, what is the kind of environment that you work in?*

S: It is open plan, you preety much manage yourself, no one is sitting on top of you, it is between you and the client and working in very big teams and its quite a good place to work, it is a huge American firm called ‘Soner’, excellent work environment, young, fun place to work. Initially I had to do a lot of training which is classroom based and I struggled a little bit, I was a little bit slow to pick up stuff but I just put in the extra hours on the side and I got through it no problem.

*A: A lot of the time some people you hear about people working in an open plan office do you have this? Distractions?*

S: There are a lot of distractions in the office, very loud, a lot of colorful characters. If I need to work I just put my music on and go for it. Music helps me a lot, I can’t really work without it I just put the headphones in, and I have a big selection.

*A: So let’s go on to actually working with your dyslexia, do you have a preferred learning style? Is there a special way that you learn perhaps in response to a particular difficulty?*

S: Its interesting you said that, because they have started teaching Spanish recently in the office because we have become a European consultancy, and so it was a free course which we all signed up for, and I’m actually monitoring the way I learn a second language because I struggle with English as it is. So I go for it you know, I go in head first, don’t mess about. I have to write down everything, I have to repeat it 4 or 5 times and I have to ask the teacher to put it in context in a sentence. It doesn’t retain in my mind, it doesn’t stick there, it has to be put there in such a way that I can refer to it later so I usually have to visualise me using it in a time or a place and then use that image as a point of reference to pick up on it later otherwise it doesn’t stick and I have to write down everything otherwise it’s not going to stick. I'm doing ok learning Spanish, it’s interesting because I'm so aware of my dyslexia at that point and I look at the way I am learning and I’m constantly writing as she is talking, trying to get everything she says down, so that’s interesting so I see it as a bird eye view of how I’m learning, I'm learning how I’m learning at the same time because it is a totally new environment, I wouldn’t be learning anything like that for a couple of years so it is interesting now I have matured a lot in my understanding of my means and ways of learning.

*A: That is interesting learning a new language, dyslexic is just the new and different ways of learning. In terms of the way you learn.*

S: I have noticed in the way I talk to my peers about the technical issues in the software, my brain jumps a couple of steps, so I wouldn’t give the background of how I got there, I would just say something and they would say, how did you get there? And they are asking how I got there and I have to say, Sorry I meant, this, this and this, but my brain just goes straight to 5 steps ahead. I feel like I think very fast but it just doesn’t make sense to anyone else. The sequence is not there, it’s not 1-4 it’s just straight to 5. I am thinking the steps though. It takes a lot of concentration sometimes so I just end up mumbling it so people may think I'm a bit weird. I have to repeat myself quite a lot because what I say initially does not make sense, it does to me, but to people outside of my little world I need to make the context, because the result is just a little bit off tangent. It’s not the simple answer you would expect, it has a little bit of a twist. It needs to be given background, so people do misunderstand me and get confused by what I say.

*A: Ok, when faced with a task would you say you display any type of method to help you in solving it in relation to your dyslexia?*

S: I do a bit of programming so it uses your troubleshooting mathematical skills, you have to write what you want to do in pseudo code so if this is this, and this is this, then go there and do that. You basically write it down in English what you want to computer to do and that is what they are taught in university but most of the guys I work with do that, but it helps me a lot to draw a diagram write down that if this value is this and is smaller that this then do this and that, and then pull from this database and do that, and then sometimes I draw scribbles of database or the scribbles of the programme so I can put arrows bouncing back and forth. That was all that we were taught at university how to come up with these things initially but I still need to refer to them in my day to day job just to help me.

*A: I think that helps a lot for people who feel if they have dyslexia, they can’t be successful or can’t be in the workplace or do anything, but actually what you realise is that there are all sorts of things that you can draw from dyslexia to help you cope*

S: Yes and also when someone later on says you have not been working on it I can say, yes I have I have been thinking about it. I may have not got to result yet but this is my work and it’s kind of like evidence that you know what I’m not stupid I am trying, I’m working on it, it’s kind of like a justification of my evidence on paper.

*A: In terms of avoiding tasks that would highlight your dyslexia, is there anything you could share on this?*

S: Yeh yeh, I would push it onto people if we are working or training in a classroom environment and someone had to write on the board I would give the pen to someone else quickly.

*A: Reading?*

S: Reading out loud, after my degree I had 6 months off and I was working for my dad in a shop, and I spent the 6 months reading solidly 9 till 5 and this improved my reading ability 50% it really improved. It was very bad. It was highlighted alot when we were doing these study courses when we were doing 'God passes by' at x’ house and we would have to read these very challenging texts out loud and I was shaking, I was red, because this was hard work. It wasn’t just a normal book either and everyone would just look at me because I would miss words and mis-pronounce words all the time and it was around the same time I got diagnosed so I took it upon myself to read heavily after that. I did online research without paying hundreds of pounds for a tutor, a specialist in dyslexia. The thing I did was just read, read, read for 6 months, I got through so many books. I used to go to the charity shop, just buy a couple of books and give them back after I read them.

*A: Was it just the reading out loud? Or was it reading in your head?*

S: Just reading in my head, sometimes I would read it out loud if I was on my own. Just hear the words as I read them, to make sure they sounded right.

*A: So going back to the example of the social situation and then you being very nervous about having to read, was it what other people would think of you or was it just the challenge in itself.*

S: Definitely what people thought of me and then I would be conscious of my shaking voice or me going red and mumbling, I was reading too fast. But this was something I took upon myself. I used my patience and persistence. I did keep going to the study sessions, it didn’t deter me from going, I didn’t want it for me to be a reason to deprive me of an opportunity to learn so I dealt with it head on. You watch people as they go around with the text, guessing your part to read. You become very relieved when you see there is not enough text to go around.

*A: But it makes you sometimes feel outside the group?*

S: Yes you are worrying the whole time.

*A: Does that you make you more aware of others?*

S: I can see other people with similar problems, I can tell straight away who is a good or bad reader and I’m very subtle, I don’t push it on people. But I guess it is standard, everyone does that. I can relate a lot to people's problems.

*A: So moving onto how aspects of dyslexia that could be considered strengths, Can you give any example of the way you have used the strongest aspects of your dyslexia to overcome barriers in the workplace?*

S: Learning how to learn, I run classroom training environments, and I work with people with varied technical background. Some people very new to computers, some people super advanced and just trying to explain concepts I feel that I have a great way of visualising it, or relating it to something else in people’s lives, making it personal so that it would click for them. So I train a lot of people on how to use the system, hundreds and hundreds of nurses and doctors and I feel that I can use my ability to associate with something else to sort of use my hands, or to draw a little diagram. People pick it up alot quicker, it is skill I picked up and now I am bringing the ideas across to other people using different ways and means of learning. It may be of use to them and I think it helps.

*A: Do you find that you have a creative side, especially in arts?*

Unfortunately not, I thought that as soon as I was diagnosed with dyslexia I would suddenly become Picasso or an amazing violinist, I tried those things but it didn’t work so I was a bit gutted. I love though and am fascinated by the arts though, music especially, I do a lot of dance, creative dancing, Salsa, break dancing, capoeira which all has an element of freestyle and creativity using your body to express yourself, I wouldn’t say I was great but it gives you a lot of fulfilment, I can’t see the relation directly to dyslexia but it would be nice If I felt I had an artistic side. I do have a very dyslexic friend who is an amazing painter. It’s quite clear cut. It’s not so clear cut with me, but who knows, I might not have picked up the right instrument, channelled it yet. It is common in my office to use music but now I feel I need it so much now that it is hard to work without it, and as i said I am distracted very very easily, especially online when you have access to the internet at the click of a button, its very hard to discipline yourself especially in work and also our internet is not filtered, so you have one window open of Facebook and get on with now work. Sometimes I need to really tie my hands down and delete all the icons so I can say come one time for work and be quite harsh on myself. But because there is no one looking on top of me, I can get away with a lot in the office, a couple of hours just idly clicking away online so it’s up to me to manage it and discipline myself not to be distracted.

*A: Resilience: In times of difficulty or when experiencing disappointment do you manage to overcome obstacles and move on?*

S: So as I mentioned earlier I like to do things head on, I'm very happy to admit failure and learn from my mistakes and I’m very interested in feedback, I feel I need feedback. I'm quite good at presenting but when I started at my company they taught us presentation skills, how to deliver content and how to train people, and I did a lot better than everyone else in the class but I still felt that I really needed the feedback in order to grow, as learning to improve myself is something that I picked up on my dyslexia and it was something I had to actively do, and I saw the benefits, so firstly to better myself and get myself on par with everyone else potentially to be better and so this attitude of learning and self betterment is something I feel I can apply to other areas in my life. I also don’t get disappointed too long; it's very temporary, if I know I can grow from it.

*A: Could you draw from any experiences that you think you can share on how you have managed to do that?*

S: Yeh I guess, I do struggle with programming I don’t pick it up as quickly as everyone else, it is an area of weakness in my office and I think that is related, people around me just say that some people pick up on it and some people cant and some people say its genetic, so I try very hard to pick up programming. Luckily it is not required; there is always the guy next to me who can help me out. So i struggled to use it and work it out, it has taken me two years and I’m getting there slowly, but I have realised that as much as I try, it’s not for me and I don’t know if that is dyslexia or some people just can’t pick it up. I guess if you have high intelligence you can pick up anything but its just not working and it doesn’t sit in my brain well.

*A: Do you think you are able to think that that is your dyslexia or you’re not sure.*

S: It’s like a 'Get out of Jail Free card', it’s like an excuse and you have to be careful when you use it otherwise you are kind of just justifying your laziness or your inability to put the hours in and when you see people around you who pick it up in 10 minutes it shakes you up a little bit and you think, 'is it because of my dyslexia?', when does this dyslexia stop and my laziness start? So its such a gray area at the moment, but I try not to use my dyslexia as a 'Get out of jail free card'.

*A: What do you think are the perceptions of the ideas of dyslexia out there? Do you think we have made it more of a big deal then it actually is?*

S: People's perception of dyslexia... I guess it needs a lot more education, for example if I told my mum, she wouldn’t know how to react. The first thing she would do would be tell all of her friends, and then people would start looking at me funny 'oh don’t worry he is dyslexic', [laughs] so I kind of keep it to myself, education wise, I guess there is no clear cut. It’s not that sample, every case is very different. My early understanding of it was that you cannot read or wrote, so I thought other people would have that perception as well, but you know it’s not their fault. It is such a new area of research that it is not clear cut it’s not black and white, what it is. I do mention it a few times when people point it out in my email. Like a guy I work with who teaches me a lot of the programming, he talks to me and teaches me stuff and I have forgotten it already so I’m thinking of soon telling him that I need to learn things in a different way, so please be patient with me?

*A: Is it hard for you to say that?*

S: I think it is, that’s why I haven’t done it to date, I think it is hard, but I think it will be extremely beneficial, and the guy I’m sure would be happy to hear it. I just see it as an opportunity to see how he can adapt his teaching or the way he works, potentially for if he wants to go into a managerial position he will have to deal with people in a similar situation, so just understanding why people are doing the things that they are, why they are struggling helps a lot in the workplace as well.

*A: Have you read a lot about it?*

S: Yeh before I went to the Psychiatrist session I read a lot into it, saw a couple of interesting documentaries, tried to look around me for people around me who were dyslexic, something that I found interesting was that there were some amazing characters throughout history like Einstein, Tom Cruise, Whoopi Goldberg, yeh these people have contributed towards the world and yeh maybe because they are dyslexic, if they weren't would they be the same people that they are today? Especially Einstein, out of the box thinking, his unconventional means, made him realise some amazing stuff. So I like to think of myself as able to see things out of the box. Able to look at things from different angles which I may not have thought of before.

*A: If there was material which would show the lives of everyday dyslexic people, looking at normal people. What experiences of their lives would you like to draw on?*

S: I guess how they take things away, like when they have been told something or they find something, or when they get 5/100 in an exam. What happens in their brain afterwards, do they point the finger at themselves, do they realise they have a problem? Do they get angry? Do they get frustrated? I presume a lot of people do go on un-diagnosed. Like prisoners in jail, it is high for people with dyslexia because people don’t know how to deal with it and they blame themselves because they find other routes in life because they struggle at getting exam results and jobs from it. So what the human element is and how they deal with it is interesting to me as well. You can take it in a few ways, you can either take it as a heads-up it’s time to get on with it, or you can just become complacent and say alright I’m stupid, I’m going to work in the basic job where I don’t have to do anything that will bring out my true capabilities and bring to people what I can do.

*A: What would you say to anyone who has just found out or thinks they have dyslexia and feels they cannot be successful?*

S: I think from my personal experience it had the opposite effect, it opened up the door, it justified my future, it gave me the tools I need, it basically said, you’re not stupid, which was one of the happiest days ever. So if you have been told you are dyslexic, you are not learning anything knew, you know that you are not good at this or not good at that, so it’s not like saying that you won’t be good at this, this and this, you already know these things you know yourself better than anyone else. It’s not at opportunity to get worse, it is an opportunity to get better and you will get the tools and guidance and understanding that will help you and generally anger is a lack of understanding and stress is a lack of understanding, so when you understand it a lot more, it will turn down these negative impacts in your life. I don’t go for much help from anywhere else, I know what works for me, I have listened to other people, spoken to the Psychiatrist who said maybe you should explore this and explore that. There are a lot of people making a lot of money out of it I guess, so I’m kind of against that. They can help, but it just wouldn’t help to pay hundreds of pounds for a specialist to work with learning methods, if I find something that works for me I use it. I feel a bit awkward because only I know how I feel and learn. They have experience, I don’t want to put them down, but I like to deal with it personally and maybe share my ways of learning with other people if you are looking at it from the same angle rather than someone from the outside or whatever who is not dyslexic. There was a support group for dyslexics at my university, I went to one or two classes, it was nice to look around and see 'oh yeh that guy in my class is dyslexic' it was just interesting to see who was. Some people I did not expect at all, but apart from that I didn’t get much else from it. They just said yeh we have the support, we have extra times in exams, we have computer programmes, but then I just left it at that. It’s important they create their own model of what they want to achieve, books i read kept telling me I would be an amazing artist, I don't, I don't have super powers [laughs]

*A: Do you feel you are able to put yourself in settings which maximise your skills and interests?*

S: I felt that I'm good at inspiring and relating to people, and making things interesting and relating it to people's ways of thinking. That helps a lot when working with young people, Junior youth, I work a lot with youth between the ages of 11-14, and I can relate very well to them, their learning their understanding because I see the bigger picture of what they are feeling and what is going on in their head and I can pick up very quickly if they are not feeling it or they need to be told something a couple of times or if they need to be given examples so that is an area which I like.

*A: Do you think you have chosen your work and your leisure to put your best abilities into play every day, if possible?*

S: Yes I would say I have been very lucky with my job, where I do work a lot with people, understanding their needs, helping them out, explaining quite complicated stuff, to people and I don’t have to write pen and paper at work, so don’t have to submit written reports, which doesn’t happen much in the workplace anyway, very lucky with my work environment, they are not micro managing me, I can work at my own pace and my own style, I can work out of hours if I need too, as long as the results are delivered they are happy for me to do what I need to do. There were a couple of interesting degree's I would have liked to do, but I thought I was not academic enough to do that ideally I would love to do those things, but then again not all people are academic, it is not something to do with dyslexia, so it’s a bit of a hazy area, is it my dyslexia or is it just people not being smart or academic? So as I said, It’s not a 'get out of jail free card', I can’t say if I wasn’t dyslexic I could study the philosophy of religion which is something I would definitely interested in.

I do a lot of sports, martial arts, music, I work with young people in my leisure time, that's it really, it doesn’t affect my leisure much. I don’t see dyslexia going out of the academic work environment. At work I definitely have to put some extra hours in to help me, but people always have too, so it all becomes a bit blurred in, it’s hard to say when one starts and the other stops.

*A: Anything else you feel you would like to share?*

S: I'm very excited to talk to someone about it, I remember when we first discussed this, I was very happy you were doing something like this. I think people need to talk more about their dyslexia, when I talk to you about it I think more about it and I can relate to it again tomorrow in my office, people don’t talk about it. I reflect on it sub-consciously, and when I talk about it I realise I do it and I can see the bigger picture whereas it’s usually just a knee jerk reaction to what I need, but this helps. You are doing a great topic.

END (51mins)

## Appendix 8: Experts interview schedule

Section 1

1. What is your background in dyslexia
2. What is your research about?
3. How did you get into the field of dyslexia?

Section 2

1. What are your experiences of working with dyslexic indiviudals?
2. What are the experiences you have had in supporting dyslexic individuals
3. How are you working with dyslexic individuals up to this date?

Section 3

1. What do you think are the strengths of dyslexia?
2. Why is a strengths based approach to dyslexia important?
3. Why is a strengths based approach important for dyslexic individuals?
4. What is your view on claimed dyslexia strengths such as cognitive talents and abilities?
5. What are the implications of investigating strengths in helping dyslexics find suitable lines of work?

Section 4

1. Do you think there are cognitive strengths associated with dyslexia?
2. Do you think there are certain interpersonal strengths dyslexics tend to excel in?
3. Do you think there are certain character strengths associated with dyslexia, perhaps as a result of their difficulties?

Section 5

1. What ongoing support is required to help an individual overcome their dyslexic difficulties?

1. (See Eide & Eide (2011) The Dyslexia Advantage for further occupation suggestions) [↑](#footnote-ref-1)