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Academic Paper

Using Q Methodology to Harness Dyslexic Strengths for a Doctoral Study

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Abstract

This article presents an argument for considering the strengths of the cognitive processing style of the dyslexic brain when choosing a research methodology. I use my doctoral research, which used Q methodology (Q) to explore views on coach development as a case study to discuss this issue. I suggest that Q is a dyslexic brain-friendly methodology as it requires holistic and divergent thinking and offers opportunities for intuitive reasoning, which are core strengths of an individual with dyslexia. In doing so, I aim to demystify Q and make it more accessible to novice neurodiverse or neurotypical coaching researchers.

Keywords

dyslexic strengths, dyslexia, Q methodology, neurodiversity, coach development

Article history

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Introduction

A defining feature of quality research is the golden thread, which runs from the theoretical perspective to the choice of methodology. When choosing a methodology, we consider our epistemological position and the nature of our research question. Often, less thought is given to how we learn and process information. This is a significant issue as, according to a recent study (Ali, Kisielewska, Subhan, & Tredwin, 2020), an estimated six percent of higher education students in England have specific learning disorders, with dyslexia accounting for over a third of those students (Gant & Hewson, 2022).

Eide and Eide (2011) challenge the traditional view and suggest we consider dyslexia a learning and processing style rather than a disorder. They see challenges people with dyslexia experience with reading, spelling, organisation and paying attention to detail as trade-offs for a different pattern of brain organisation and information processing. Taylor and Vestergaard (2022) agree with this premise, proposing that individuals with dyslexia possess specialisations in “explorative cognitive search” (p.1), which is associated with creative thinking, innovation, and discovery.

The support to assist individuals in navigating the challenges of academic research focuses on strategies and interventions that address their learning challenges. Little thought is given to how these individuals can express and develop their strengths to capitalise on the "dyslexic advantage" (Eide & Eide, 2011, p.6). I am inviting us to consider the strengths our cognitive processing style offers when selecting a research methodology. Specifically, I argue for using Q methodology (Q) as a brain friendly approach for individuals with dyslexia. The dyslexic advantage capitalises on Q's holistic methodological system, which Watts and Stenner (2012) consider to be reflected in the whole process, from data collection to analysis and interpretation.

I have two caveats in proposing Q as a brain-friendly methodology for individuals with dyslexia. Firstly, dyslexia can affect people differently, and individuals with dyslexia have different patterns of strengths and challenges (Griggs, 2021). I am not positioning myself as an expert in dyslexia. Rather, I am sharing my experience of using the strengths my form of dyslexia offered me to complete a doctorate successfully. Secondly, considering our cognitive processing styles when choosing a methodology is not done to the detriment of quality research. This requires an alignment between theoretical perspective (our ontological and epistemological position) and research methodology (Cotty, 2008). For example, my primary criterion for selecting Q as a research methodology was that it aligned with my constructivist and pragmatic research paradigm (Garrison, 1995). I also wanted to ensure my study was underpinned by a methodological approach that had rigour and would provide confidence in the credibility of the findings. My final consideration was that Q played to my dyslexic strengths of intuitive reasoning, innovative thinking, pattern spotting and synthesis.

Why Q?

Q is a widely accepted methodology used in various research fields on the range and diversity of subjective perceptions, experiences, and beliefs (Churruca, Ludlow, Wu, Gibbons, Nguyen, Ellis and Braithwaite, 2021). Good (2010) notes that Q provides a 'rigorous set of procedures for identifying the point of view and relating it to the points of view of others' (p.213). The methodology is based on the premise that subjectivity can be systematically analysed using statistical techniques for data analysis and a qualitative approach for data interpretation to categorise viewpoints (McKeown & Thomas, 2013). It offers an alternative to constructivist grounded theory (Charmaz, 2014) and discourse analysis (Fairclough, 1992), which also have coherence with a constructivist paradigm and a research approach which aims to enhance an understanding of how individuals experience or conceptualise a phenomenon.

A benefit of Q for coaching related studies is that Q is considered a person-centred holistic research methodology (Farrimond, 2017). Coogan and Herrington argue that no other methodology captures "the essence of what the participants feel about a topic from collective voices, while at the same time identifying subtle differences between some of these voices" (2011, p. 27). This offers an axiological alignment with the core values of coaching, a professional discipline underpinned by a humanistic, person-centred approach (Bryant-Jefferies, 2021) and requiring equity in how we work with clients (ICF, 2023).

Q has been criticised for its lack of methodological rigour, structure and systematic approach to developing the research instrument, data collection and analysis (Kampen & Tamás, 2014). However, Stenner (2009) maintains that it is a poorly conducted study rather than the methodology undermining the quality of research using Q. Understanding the techniques involved and applying them appropriately presents a challenge for novice researchers and those with dyslexia. However, I would argue that this is where the dyslexic researcher has an advantage. Q is an exploratory process. Each phase of the Q process requires holistic thinking, divergent thinking, and intuitive reasoning. These abilities are the core strengths of the dyslexic brain (Taylor & Vestergaard, 2022).

Dyslexic Strengths

Several studies have concluded that individuals with dyslexia possess an enhanced ability for holistic thinking, enabling them to perceive the big picture literally and figuratively (Schneps, 2014). This attribute involves a heightened ability to reason in multi-dimensions, which helps individuals in detecting and reasoning about complex systems. This also involves identifying patterns and analogies and seeing connections between different perspectives in various fields of knowledge (Eide & Eide, 2023).

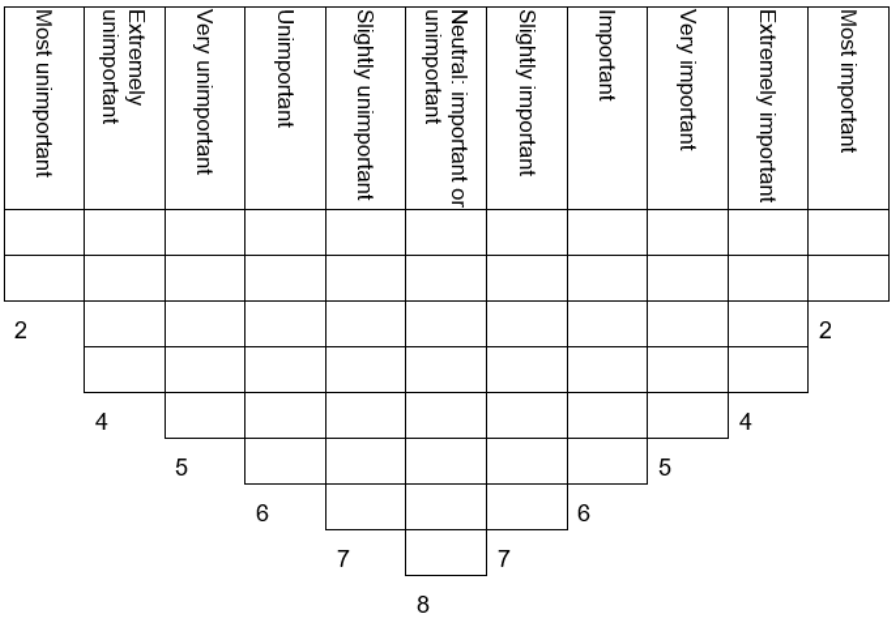
Other studies have shown that individuals with dyslexia have a more innovative thinking style due to enhanced abilities in various aspects of divergent thinking (Lam & Tong, 2021). This encompasses the ability to generate many solutions or ideas to solve a problem, flexibility in switching between categories, and the ability to connect unusual combinations of ideas, which is a feature central to creativity, another skill for which individuals with dyslexia are recognised (Runco & Acar, 2012).

One of the features of my dyslexia is insights-based reasoning. I can quickly generate non-obvious interpretations or solutions without conscious thought. I can see the answer, although I cannot explain my rationale. Kounius and Beeman (2014) have noted that this is a feature of many individuals with dyslexia, contrasting it with deliberate analytical and incremental problem-solving associated with neurotypical brains.

An overview of Q

In Q studies, the participants (the P set) are provided with a set of items (the Q set) that they rank to reflect their views on the topic being studied. In my research, the items were statements relating to coach development. The P set were executive coaches based in the UK. They articulated their unique points of view on what they considered important when identifying their development needs by arranging the items in a ranking grid according to their perceived importance. Figure 1 illustrates the ranking grid, which describes the shape of a normal distribution.

Figure 1: Ranking Grid for Q Sorts



This process reduces the multiple items to a single gestalt configuration, the Q sort, representing a participant's viewpoint on coach development. All Q-sorts are statistically compared with each other so that similarities and differences lead to the identification of factors. In Q, a factor represents a particular level of statistical correlation to provide confidence the individual Q sorts identified with the factor were similar enough to be represented by a single ideal typical Q-sort called a factor array. A factor array is standardised Q-sort configurations that represent the viewpoints of that particular factor.

The process of a Q study can be summarised in four stages: research design, data collection, analysis, and interpretation (Zabala, Sandbrook & Mukherjee, 2018). These four stages informed the three phases of my research: creating the instrument (the Q set), data collection (the Q sort) and data analysis and interpretation to create a typology of developmental strategies. This is summarised in Figure 2.

Drawing on Dyslexic Strengths to Conduct the Research

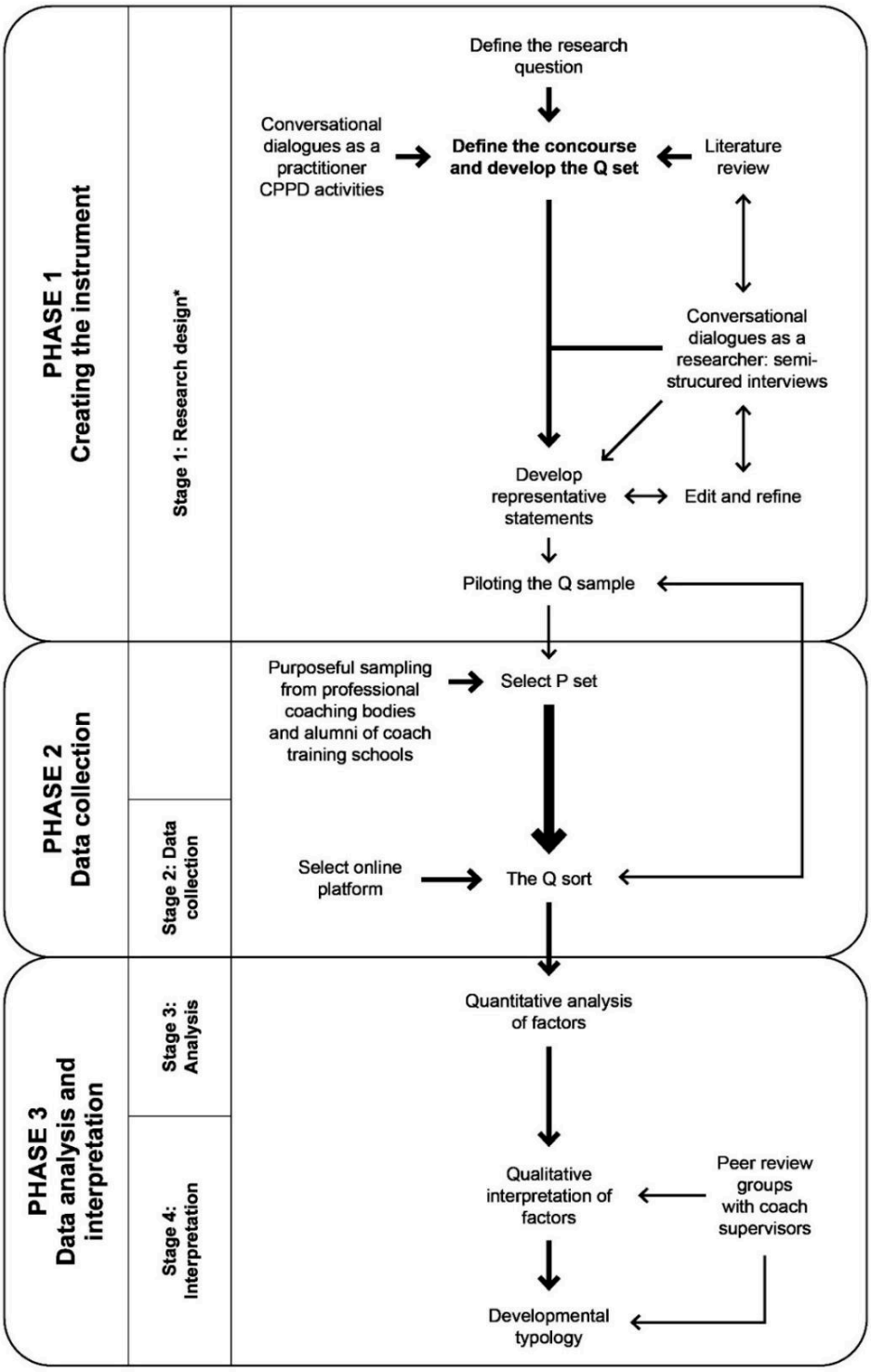
Each of these stages presents a different challenge, which is amplified for a researcher with dyslexia. Successfully navigating these challenges required a pragmatic perspective and a willingness to experiment with trial and error. Throughout the study, I drew on holistic thinking and insights-based reasoning. However, my aptitude for divergent thinking played the most important role. It enabled me to devise innovative ways to make the processes as simple as possible and reduce the potential for errors in creating and manipulating text and figures.

Creating the Research Instrument

Divergent thinking and insights-based reasoning came into play in the design of the research instrument, which required creating the concourse. This was a comprehensive list of all the possible opinions on coach development from which a representative sample of items was selected to create the Q set. The success or failure of a Q study and the research quality depends on having a valid and systematic Q set. This meant that the statements in the concourse needed to reflect the diversity of opinions on coach development. As the concourse had the potential to be infinite (Zabala et al., 2018), I needed to decide when I had gathered a large enough population of ideas to draw a representative sample of opinions on coach development for the Q set.

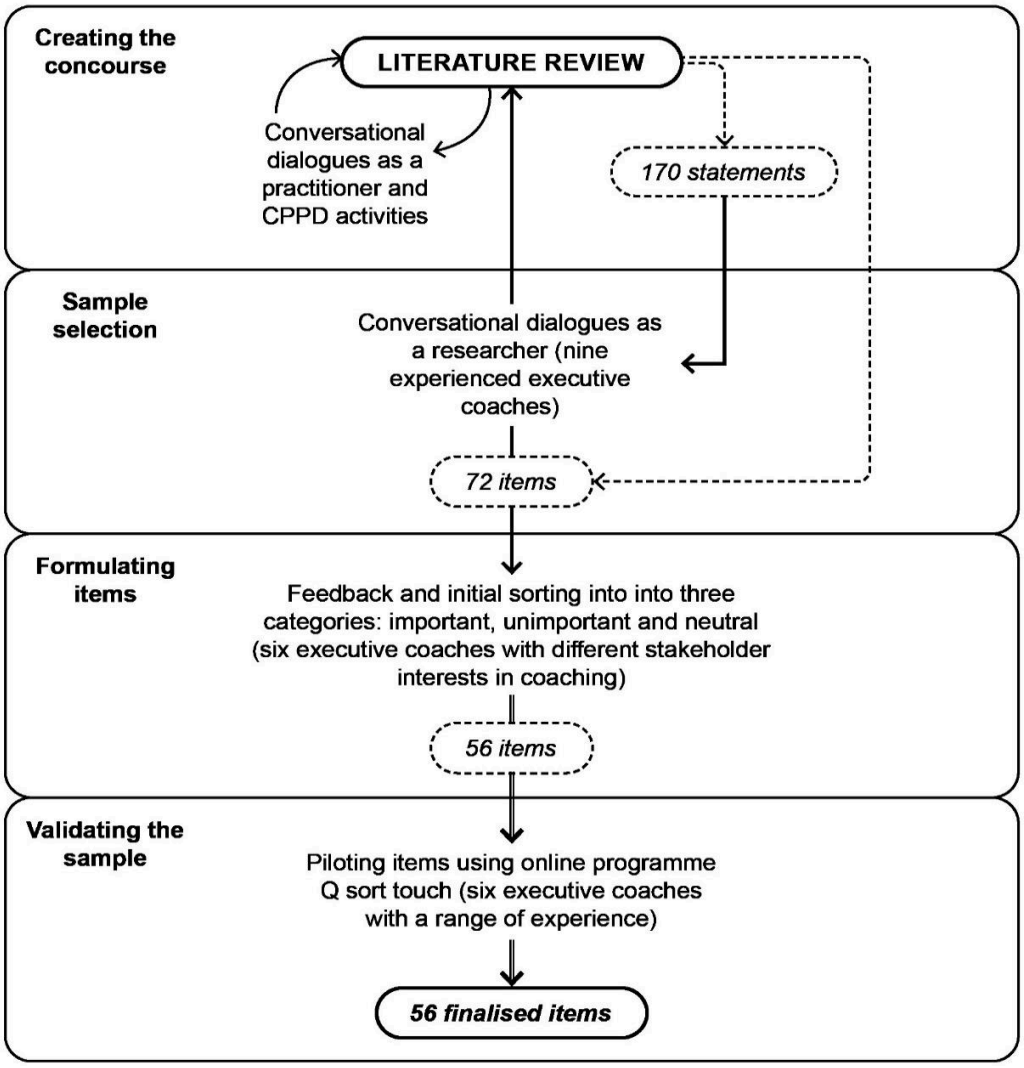
My innovative approach to creating the concourse synthesised ideas and concepts from over forty Q studies ranging from socio-environmental studies to health care research. This process also enhanced my literature review, as my exploration included several PhD theses from other fields of knowledge and studies on the effectiveness of coaching. These offered different perspectives on the development of expertise and professional development, which I had not considered in my initial drafts. I creatively used dialogues, including interviews with experienced coaches, to generate more items for the concourse. This reduced my reliance on reading numerous texts in detail for item generation. Figure 3 summarises how the Q set was created.

Figure 2: The Three Phases of the Research



*Zabala, Sandbrook and Mukherjee's *Four Stages of Qs Process* (2018)

Figure 3 Creating the Q Set



When I reached around 170 items, I intuitively knew the concourse provided a representative and balanced reflection on the coach development discourse. The literature confirmed this hunch (Brown, 1993), as 170 items are typical for a Q set that aimed to be around 50 to 60 statements. My next step involved using subject matter expertise to refine the items and create a Q set of 56 items. This involved interviews with experienced coaches on their developmental journeys, followed by another group of executive coaches conducting an initial sort and providing feedback on a draft Q set. They were asked to give feedback on item relevance and comprehensiveness after sorting them into three groups according to what they felt was important, not important, or neutral when considering their developmental priorities. This process provided reassurance that the Q set was comprehensive and balanced and captured the gamut of possible options and perspectives on what was important to coaches when considering their development needs.

Data Collection (The Q Sort)

Data collection presented a challenge in the administration and accurate transcription of data for statistical analysis. I dealt with this by looking for creative and innovative solutions to make the process as simple as possible. Although ninety per cent of researchers use a face-to-face approach for the Q sort (Churruca et al., 2021), I decided to use a web-based data collection process. This offered two benefits for the dyslexic brain. Firstly, it needed less administration than face-to-face or via email. This was important as I have challenges with implementing procedures requiring detailed administration. Secondly, CSV data files that could be directly uploaded into a software program for data analysis were generated immediately. This reduced my potential for error when manually transcribing data. In addition, it made it possible for coaches anywhere in the UK to participate in the research, making the data collection process more inclusive.

Data Analysis and Interpretation

Q data analysis presented the biggest challenge to me. Conversations with neurotypical colleagues suggested this was also an issue for novice Q researchers. Understanding the statistical analysis in Q involves reading detailed statistical articles and conceptualising correlation factor extraction and factor rotation. Being dyslexic introduced additional challenges as I read complex and unfamiliar text on a word-by-word basis, so they are hard for me to comprehend. What helped was finding metaphors and analogies to comprehend abstract statistical concepts. This strategy may be due to the understanding of metaphors and analogy being associated with insight-based reasoning (Kounios & Beeman, 2014). When I sought help from experienced statisticians and my supervisors, I asked them to use metaphors to explain concepts I found difficult to grasp. For example, drawing an analogy between extracting factors and cutting a pie helped me understand that they depend on what I want to achieve. Is it to serve the most people or to give generous portions to a few friends? I understand factor rotation as moving to different seats in the theatre until I got the best view of the group of actors.

Accepted practice is to use PQMethod, PCQ and Q Assessor for data analysis (Watts & Stenner, 2012). This requires a lot of manual manipulation and a detailed understanding of how the statistical processes work. Drawing on the analogy that I could drive the car without understanding how the engine works, I looked for other options that would enable me to enter the data and get an output to complete the qualitative interpretation. In my exploratory reading, I came across the R Foundation software package (qmethod), which selects and rotates factors and provides the rotated factor loadings, so there is no need to do this manually by plotting the positions of the Q sorts in relation to the different factors. The programme also tabulated results in a way that is ‘easy to examine and interpret’ (Zabala, 2014, p.172). My choice of this software package was pragmatic. However, my decision was justified by the fact that since it became available in 2014, more researchers from diverse disciplines have used it to analyse the Q-sort data and display results and have successfully published peer-reviewed Q studies (Zabala, 2014; Hettrick, 2016; Davis, 2018).

Where Q most offers a dyslexic advantage is in the interpretation of the factor arrays. The factor arrays re-establish the holistic nature of the research method by illustrating the whole viewpoint, which needs to be reflected in the interpretation. Each item needed to be considered in the context of the overall configuration of the factor array to give a sense of the gestalt of the item (Watts & Stenner, 2012). The position of an item in relationship to where it appears in other arrays also has relevance in defining the distinguishing characteristics of a viewpoint. For example, interpreting how participants viewed the role feedback plays in their development. Factor one and factor two rated the items ‘benefitting my clients’ and ‘getting feedback’ from clients similarly. However, when seen in the context of items that focus either on what the coach does (using new tools and techniques) or how the coach is being (more self-aware), as shown in Table 1, it is clear that feedback plays a different role for these coaches.

Table 1: Relative Ranking of Items

Item	Factor 1 Ranking	Factor 2 Ranking
For the benefit of my clients	Extremely Important	Very Important
Getting feedback from my clients	Extremely Important	Very Important
Boosting my confidence	Important	Extremely unimportant
Getting new tools and techniques	Most important	Neutral
Gaining self-awareness	Extremely Unimportant	Very Important
Psychological safety	Important	Most Important

Factor one wants feedback to provide reassurance that they are benefiting clients by using appropriate tools and techniques. In contrast, for factor two, feedback helps develop a relationship where the client benefits from psychological safety. Interpreting data in this way requires the ability to recognise connections, patterns, and relationships within and across data. The dyslexic brain can quickly see connections within and across the data to provide original insights that a neurotypical brain may not have seen.

The Role of Collaboration

In focusing on the strengths of the dyslexic brain, I don't wish to discount the challenges that having dyslexia creates for academic study. From a systematic review of research on dyslexia in higher education, Pino and Mortari (2014) identified four themes reflecting how students overcame or compensated for difficulties. These were: study skills; compensatory strategies; help from family, friends and fellow students; and strategies to help with organisation and managing emotions. Common to all was an element of collaboration with others.

Taylor, Fernandes, and Wraight (2022) suggest successful human adaptation arises from collaboration between individuals specialising in different but complementary neurocognitive strategies. Neurotypical individuals benefit from individuals with dyslexia specialisation in “exploratory cognitive search” (Taylor & Vestergaard, 2022, p.1). This neurological strategy allows individuals to offer innovative solutions to the complex issues the neurotypical brain cannot resolve. However, the neurotypical brain focuses on procedures that enable these ideas to be implemented. If I had not taken a collaborative approach to all elements of my doctoral journey, I would have been unable to succeed.

As a methodology, Q requires collaboration that goes beyond the relationship between the researcher and participants. As with traditional Q studies, I worked with subject matter experts to develop and validate the research instrument, pilot the Q sort process, and substantiate my interpretation of the factor solution. However, my collaboration with others went beyond these standard requirements. I used subject matter experts to provide confidence that my insights-based reasoning would stand up to academic scrutiny. In my research, there were three main areas where I could see the solution. The first was three factors as the optimum factor solution, the second was the model for a typology of developmental strategies, and the third was proposing we draw on adult learning theory rather than adult development theory to help understand coach development. I ensured I had conversations with individuals who could challenge my thinking and would allow me to articulate statistical or academic justifications for my conclusions. In addition to my supervisors, these included colleagues from my community of practice and my fellow Q researchers. I also used a peer review group to pilot my typology.

Conclusion

In this article, I have proposed that we consider our thinking styles and how we process information when choosing a research methodology. Specifically, I have argued for using Q as a brain-friendly methodology for individuals with dyslexia. I shared how I used the strengths of a brain specialised for “explorative cognitive search” (Taylor & Vestergaard, 2022, p.1), potentially making Q more

accessible as a research methodology for all. I hope the strategies I offer resonate with neurotypical and neurodiverse researchers and will encourage them to consider Q as an option for studies that explore how we experience or conceptualise phenomena.

Currently, the system focuses on dyslexia as a deficit or a problem. I am adding my voice to those who advocate reframing dyslexia as an advantage for individuals seeking to make original theoretical and practical contributions to knowledge. This does not negate the challenges of dyslexia. I propose that we take a more holistic view that accepts these challenges as trade-offs for other strengths and appreciate that different minds are optimised for different purposes.

Up to the graduate level, the education systems primarily assess the ability to reproduce known information, which presents a problem for people with dyslexia (Dobson Waters & Torgerson, 2021). However, for Masters and Doctoral studies, students are required to use data to develop new solutions and explore the unknown. The cognitive style of explorative individuals with dyslexia is not generally considered or rewarded in higher-level academic research (Bazen, de Bree, van den Boer, & de Jong, 2023). Too many students with dyslexia are worn down by misunderstandings and negative messages that they do not consider graduate studies feasible (Edie & Edie, 2023).

Enabling more neurodiverse students to succeed in higher education is more than having strategies and technology and collaborating with others to navigate the academic systems. It is about helping individuals understand their thinking process and what works well and what does not work well. Whether we are neurotypical or neurodiverse, understanding the strengths of our thinking style can provide the optimism and mental toughness necessary to tolerate short-term frustrations and failures without abandoning the long-term commitment and effort it takes to achieve a Masters Degree or a Doctorate.

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