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# *Exploring the Challenges of Dyslexia in Education and the Workplace: A Multi-Case Study of Academic and Professional Journeys*

Fatemeh Zolfagharian[1*], Mahnaz Akhavan Tafti [1,2] and Elaheh Jarrahi[1]

1 *Iranian Specific Learning Disorders Association*
2 *Department of Educational Psychology, Al-Zahra, Tehran*

*Abstract*

*The objective of this study was to investigate the lived experiences of individuals with dyslexia. We examined 13 individuals with dyslexia, encompassing school-leaving teenagers, adults who discontinued their education, and those with higher education backgrounds, to gain insights into their career paths. Our research employed a multiple-case study approach, allowing for an in-depth examination of each case. We recruited adult participants with dyslexia through the website and virtual channels of the Iranian Learning Disabilities and Differences Association. Following diagnostic interviews, a review of educational records, and the completion of the Adult Reading Checklist (ARC-P), a final sample of 13 participants was selected. These participants were categorised into three demographic groups. Semi-structured interviews were conducted, and Braun and Clarke's reflexive thematic analysis method was applied, resulting in the extraction of four key themes. Our findings revealed that the lack of proper diagnosis contributed to various educational challenges and emotional difficulties for the participants. Additionally, it was observed that nearly all participants gravitated towards careers that allowed them to leverage their visual-spatial talents and creativity, such as design, tailoring, and illustration. This study underscores the importance of further research to explore the relationship between dyslexia and visual-spatial abilities, as well as to gain a deeper understanding of the motivations and skills of dyslexic individuals across different fields.*

Keywords: Dyslexia, academic and professional experiences, visual-spatial talents, creativity.

* *Correspondence to:*
*Dr Fatemeh Zolfagharian, Iranian Specific Learning Disorders Association, fetemezol@gmail.com*

## INTRODUCTION

Dyslexia is a prevalent learning challenge that persists into adulthood, significantly impacting various aspects of individuals' lives (Doust et al., 2022; Farah et al., 2021; Alexander-Passe, 2018). This condition, rooted in one or more issues within the nervous system (Brimo et al., 2021; Stein, 2023), presents dyslexic individuals with the formidable task of recognising and comprehending the fact that written and spoken words consist of discrete components and blocks (Shaywitz & Shaywitz, 2020). These challenges often manifest as a deficiency in phonological awareness (Liberto et al., 2018; Cheema et al., 2023; Castles & Friedmann, 2014; Thomson et al., 2012), resulting in difficulties in reading fluently and accurately, as well as in writing words correctly. It is important to emphasise that these challenges have no bearing on the intelligence of individuals with dyslexia (Holmes et al., 2021; Shaywitz & Shaywitz, 2020).

Instead, it is more accurate to describe dyslexia as an unexpected reading disability (Catts & Petscher, 2021). Dyslexia poses significant obstacles, leading individuals to lag behind their peers and engendering extensive emotional, educational, and social challenges (Zou et al., 2022; Claessen et al., 2020; Wilmot et al., 2023).

In parallel with these deficits, numerous researchers have uncovered a paradoxical blend of weaknesses and strengths in dyslexic individuals (Taylor & Vestergaard, 2022; Holme et al., 2021; Kannangara, 2018; Franks & Frederick, 2013; Hickman & Brens, 2014). This longstanding enigma in dyslexia research, dating back to Orton's pioneering work in 1890 and persisting to this day, centers on the coexistence of these weaknesses and strengths (West, 2014). Notably, the narratives of accomplished dyslexics who have achieved Nobel Prizes stand as a testament to their remarkable potential and capabilities, despite facing academic challenges and navigating a challenging path to higher education (Diamond, 2023; Locke et al., 2016; Bacon et al., 2013).

Many dyslexic children exhibit robust problem-solving and visual-spatial skills (West, 2022; Bacon & Handley, 2010; Cooper, 2009; Davis & Braun, 2010; Kapoula et al., 2016; Alencar, 2003; Leveroy, 2013), often highlighting their artistic inclinations (Chakravarty, 2009). Additionally, dyslexic individuals frequently demonstrate remarkable proficiency in three- dimensional spatial awareness, with applications in architecture, construction, mechanics, interior design, and art (Kannangara, 2018). The distinctive cognitive profile of dyslexia also offers advantages in specialised fields such as astronomy, as evidenced by research (Schneps et al., 2011). Notably, the British Government Communications Headquarters (GCHQ) has acknowledged the value of dyslexia, considering it a clandestine asset in espionage efforts and employing dyslexic individuals in top-secret activities (West, 2014).

While some argue that dyslexics may gravitate toward fields relying on non-verbal skills due to their verbal challenges (Winner et al., 2001), recent findings from qualitative and

quantitative research suggest that the preference for visual thinking is intrinsic to the phenomenological experience of dyslexics (Bacon & Bennett, 2012). They do not merely default to these fields; instead, they naturally align with them. Moreover, emerging neurological research confirms that dyslexics employ distinct cognitive strategies and pursue professions based on the unique structures and functions of their brains (Pietro et al., 2023; Richlan, 2020; Stein, 2023; Longobardi et al., 2019; Viersen et al., 2019).

Prominent entrepreneurs like Richard Branson and Charles Schwab, both dyslexic, assert that dyslexia has contributed to their success while conventional schooling poses challenges (Logan, 2009). Importantly, dyslexic individuals with academic achievements can be found in various fields, including medicine, chemistry, and law.

The apparent contradictions in the statistics regarding adult dyslexics create controversy surrounding their educational experiences. On one hand, in the United States, approximately 35% of entrepreneurs are dyslexic, with 22% classified as severely dyslexic (Logan, 2009). Conversely, there is a substantial number of dyslexic dropouts and juvenile delinquents who become entangled in the judicial system and prisons (Jones & Manger, 2019; Kirk & Reid, 2001; Samuelsson et al., 2003; Talbot, 2010). Recent research in this domain indicates that around 47% of prisoners exhibit symptoms of dyslexia (Cassidy et al., 2021).

In the accounts of some dyslexics, they attribute their success to supportive teachers who played a pivotal role (Leitão et al., 2017; Knight, 2018). These educators not only motivated them to complete high school but also encouraged them to pursue higher education (Miles et al., 2006; White et al., 2020). Nevertheless, many studies indicate that teachers often lack sufficient knowledge about dyslexia and how to manage it effectively in the classroom (Leitão et al., 2017; Macias, 2013; Moats, 2009; White et al., 2020; Worthy et al., 2016). Experts in dyslexia suggest that most dyslexics may leave school with severely diminished self-esteem and negative experiences (Alexander-Passe, 2018; Burden, 2005 & 2008; Gallagher et al., 2020; Scott, 2016; Shaywitz & Shaywitz, 2020; Zeleke, 2004). However, their resilience ignites when they begin harnessing their strengths in alternative domains (Agahi, 2015). Alexander-Passe posits that traumatic experiences serve as potent motivational triggers for successful dyslexics (2016).

## RATIONALE AND AIM FOR THE CURRENT STUDY

As we delve into the topic, it becomes apparent that some dyslexic individuals select their professions based on their innate visual-spatial abilities, often bypassing traditional academic education and training courses, yet attaining remarkable success in their chosen fields. Paradoxically, their recollections of school are often marred by traumatic experiences (Alexander-Passe, 2015 & 2018). While there exists a substantial body of research focusing on the achievements of dyslexic individuals who have pursued academic education, there remains a conspicuous dearth of research dedicated to

dyslexic dropouts. This unexplored territory is ripe for investigation, as the distinctive educational circumstances leading to their departure from conventional schooling could offer valuable insights for devising both remedial and preventive measures.

In this research endeavor, we aim to uncover the diverse experiences that dyslexic individuals encounter during their educational journeys. Specifically, we seek to understand the shared experiences of individuals who have dropped out of formal education or teetered on the brink of expulsion, in contrast to their dyslexic peers who have persevered in their academic pursuits, achieving noteworthy levels of success. We are eager to gain insights into the educational encounters these individuals have had and to elucidate the profound impact of these experiences on their professional development in adulthood.

To address these inquiries, we have embarked on an investigation encompassing several cases involving dyslexic individuals who are currently navigating the tumultuous waters of dropping out of school, alongside adults who departed the educational system years ago. We intend to juxtapose their experiences with those of dyslexic individuals who have attained high levels of academic education. By undertaking this comparative analysis, we aim to shed light on the factors that shape the educational trajectories and eventual professional outcomes of dyslexic individuals across these distinct pathways.

## METHODOLOGY

Our research methodology employed a multiple-case study approach, which facilitated a comprehensive and in-depth examination of each case. This choice was deliberate, as multiple- case studies enable a shift in focus from individual cases to the exploration of differences andcommonalities between them (Hunziker & Michael, 2021). According to Zach (2006), this method enables the identification of recurring patterns and generates fresh insights into the subject matter. As articulated by Greene and David (1984), a multiple-case study involves a structured investigation of multiple cases, with the analysis of results aimed at drawing generalizable conclusions applicable to a target population. Thus, this approach allowed us to investigate the unique educational experiences of dyslexic individuals, providing valuable information for educational decision-making.

The collected data from our study's participants, obtained through semi-structured interviews, underwent analysis using the thematic analysis method. Thematic analysis is a qualitative and highly adaptable approach that empowers researchers to discern emerging patterns (Ghasemi & Hashmi, 2019). In our research, we employed the six-stage analysis framework proposed by Brown and Clarke (2006, 2019) to categorise the data and identify four overarching themes.

## Materials

Adult Reading Checklist (ARC-P): To ensure a more precise diagnosis, we utilised the Adult Reading Checklist ARC-P, originally developed by Smith and Everett (2001). The Persian version of this checklist was prepared and validated in 2013 by Pourtemad and colleagues. It boasts an internal consistency score of 74% and a reliability coefficient of 52%. This checklist comprises 15 questions, with responses recorded on a Likert scale. The total score is calculated as the sum of the values associated with each answer to all the questions. Scores falling below 45 indicate the absence of dyslexia, while scores ranging from 45 to 60 signify stable symptoms of mild dyslexia. Scores exceeding 60 indicate stable symptoms of moderate or severe dyslexia.

## Job Investigations and Interviews

### Semi-Structured Interviews

Each dyslexic individual participated in a semi-structured interview, encompassing six general questions:

1. How did you experience the initial stages of your formal education in primary school, particularly concerning reading and writing?

2. Did you encounter challenges in specific school subjects, or did you excel in any particular area?

3. Were you confronted with emotional difficulties during your school years?

4. Did you exhibit a distinct interest in artistic, technical, or practical tasks?

5. To what extent were your talents recognised, encouraged, and supported during your educational journey?

6. How did you arrive at your current occupation?

### Additional Questions for Dyslexic Dropouts and School-Leaving Teens

1. What prompted your decision to drop out of school?

2. How did you acquire the necessary skills for your chosen profession without formal training courses?

**Participants & Procedure**

To assemble a cohort of individuals with dyslexia for our study, we initiated a recruitment drive via online platforms and virtual channels affiliated with the Iranian Learning Disabilities and Differences Association. Our targeted outreach was directed at individuals who exhibited symptoms indicative of dyslexia and expressed willingness to participate in a research study. Consequently, we successfully assembled a pool of 15 adults and teenagers who met these criteria.

Upon gathering potential participants, we conducted an extensive review of their developmental backgrounds and educational records. This meticulous evaluation helped us ascertain their eligibility and suitability for inclusion in the study. Subsequently, we subjected them to the Adult Reading Checklist ARC-P, a diagnostic tool developed by Smith and Everett in 2001. Based on Smith and Everetts, the ranking for dyslexia is as follows:

- Scores below 45 suggest the absence of dyslexia;
- Scores falling within the range of 45 to 60 indicate mild dyslexia;
- Scores above 60 indicate moderate to severe dyslexia.

Table1. The Adult Reading Checklist-P (ARC-P) Scores

| Name | ARC-P–score |
|---|---|
| Ahmad | 65 |
| Ali | 70 |
| Fatemeh | 68 |
| Danial | 55 |
| Maryam | 66 |
| Mohammad | 68 |
| Amir | 52 |
| Reza | 60 |
| Fariba | 88 |
| Iman | 65 |
| Amir Reza | 82 |
| Hamidreza | 90 |
| Arash | 57 |

Note: The numbers recorded in this table for each person show the score they got in the reading of the adult reading checklist ARC-P developed by Smith and Everett (2001)test.

Subsequently, we used the ARC-P scores to identify and select a final sample of 13 participants who exhibited varying degrees of dyslexia symptoms. This rigorous selection process ensured that our study encompassed a diverse range of dyslexic experiences and levels of severity.

Table2. Participants' Demographics

| **Name** | **Age** | **Education** | **Occupation** |
|---|---|---|---|
| Ahmad | 40 | MA in animation | Character designer and animator |
| Ali | 35 | MSc in Telecommunications and Electricity | Media affairs technician |
| Fatemeh | 32 | MA in Sewing Ddesign | Design teacher |
| Danial | 30 | MA in Industrial Design | Designer |
| Maryam | 48 | Education up to middle school | Tailor |
| Mohammad | 43 | Education up to middle school | Car mechanic |
| Amir | 36 | Education up to high school | Factory internal director and entrepreneur |
| Reza | 49 | Education up to middle school | Car repairman, electrical appliance repairman, and interior decorator |
| Fariba | 13 | High school dropout | Hairdresser |
| Iman | 15 | High school dropout | Supermarket accountant |
| Amir Reza | 15 | High school dropout | Designer, painter and illustrator |
| Hamidreza | 17 | High school dropout | Cattleman |
| Arash | 16 | High school dropout | Auto mechanic student |

Note: This table contains information about the current educational status, occupation, and age of the participants.

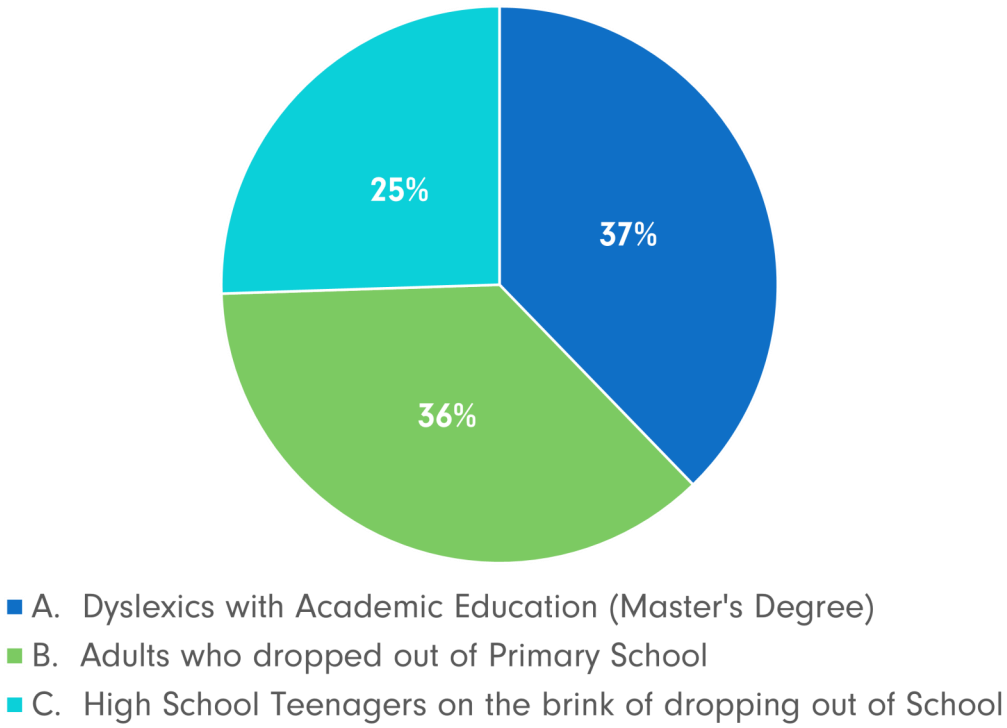


Figure1. Educational Status Of The Participants

**Interviews and Data Analysis**

The interviews were conducted through online platforms, and explicit consent was obtained from all participants before recording each session. We sought permission from all participants to include their first names while holding their last (family) names in the research. This approach was taken to uphold confidentiality and adherence to the ethical guidelines of the study.

This meticulous data collection process spanned a duration of three months. To ensure data consistency, all interviews were conducted by a single interviewer, the primary researcher. All dyslexia participants in this study were native Persian speakers, and the interviews were conducted in the Persian language. Following the interviews and data analysis, the research findings were translated and summarised into English by the researchers.

Notably, one of the participants with dyslexia was concurrently engaged in the IELTS test during the study, providing valuable insights into his experiences in learning a second language and the obstacles he encountered. This presents a potential avenue for future research.

Subsequently, we commenced the data analysis process, following Clarke and Brown's model. The analysis unfolded in several stages:

**Transcription**
In the initial stage, the verbatim responses provided during the interviews were meticulously transcribed.

**Open Coding**
The first researcher undertook the initial open coding process, generating a preliminary set of codes. This code set was then subjected to review by a second researcher to enhance accuracy and comprehensiveness. Through a collaborative effort, two sets of codes were harmonised and refined, resulting in a more precise and detailed compilation of new codes.

**Theme Extraction**
Building upon the refined codes, thematic elements were extracted, identifying recurrent patterns and concepts within the data.

**Examination of Themes**
The first researcher thoroughly examined the emerging themes, scrutinising their significance and relevance within the context of the study. Following this comprehensive analysis, the identified themes were presented for validation and approval by the study's supervisor, who served as the second researcher. This collaborative review ensured the rigor and robustness of the thematic analysis process.

Ultimately, this meticulous analysis yielded four overarching themes that encapsulated the rich and diverse experiences of the participants.

**Analysis**

Our analysis unveiled four prominent themes, each addressing a distinct facet of our research objective.

**Preference for Visual-Spatial Professions**

Participants across all three groups expressed a compelling inclination toward visual-spatial tasks from an early age. Many recounted their childhood fascination with activities such as painting, construction, and games that involved spatial thinking. This early interest exerted a profound influence on their academic journeys. For instance, individuals like Iman leveraged their exceptional visual memory to excel in fields like accounting, where the capacity to retain a multitude of prices simultaneously proved advantageous. Representative responses from participants illuminate this theme:

**Amirreza**

> *"During my assignments, I had a habit of adorning the margins of my notebooks with doodles. I found the prospect of inscribing black text on a blank page overwhelming, so I preferred having something visual to accompany it. In class, I'd surreptitiously sketch the teacher's visage, hand gestures, or the classroom surroundings under my desk, a tactic that made the hours pass more swiftly."*

**Fatemeh**

> *"As a second-grader, the word 'boat' in a reading lesson ignited my imagination. I'd envision myself on a sunlit boat at sea, transported from the classroom. My teacher's reproaches would repeatedly yank me back to reality, leaving me powerless against these captivating daydreams."*

**Ali**

> *"My fascination with structures and building blocks drew me to fields like telecommunications and media. I also harbor a fascination for grammatical structures in language learning, despite the challenges of spelling. This duality, wherein I find certain aspects intriguing and others taxing, is emblematic of my dyslexic experience."*

**Consequences of Being Misunderstood in School**

Ten out of the 13 participants reported grappling with emotional difficulties during their school years, underscoring a pervasive sense of being misunderstood. Only one participant received a correct dyslexia diagnosis in a school setting, while the others remained undiagnosed or, in two unfortunate instances, were misdiagnosed and subjected to inappropriate treatments. These participants commonly recounted negative school environments marked by instances of bullying and a lack of support. However, two participants (Ahmad and Amir) with no apparent emotional issues during their schooling described the school as a relaxed environment where their interpersonal skills thrived. The remaining 11 participants shared distressing memories from their school days, exemplified by these experiences:

**Amirreza**

> *"One particularly daunting moment in school occurred when the teacher called me to the board for a dictation exercise. I was overwhelmed with anxiety; my hands shook, my palms sweated, and I stammered through the task. The chalk slipped* from my *grasp repeatedly until the teacher, in front of the entire class, struck me with the fallen chalk and disdainfully labeled me 'clumsy.'"*

**Fatemeh**

> *"My teacher subjected me to physical abuse in front of my older sister, who attended the same school. The humiliation was unbearable, and I wished to vanish. I was perpetually singled out for blame, compelling me to occupy the back of the classroom, striving to remain inconspicuous."*

**Ali**

> *"Recollections of unpleasant school days, hours of monotonous dictations and readings, and ceaseless familial disputes are seared into my memory. Feelings of shame and guilt persist, manifesting as stress and lethargy whenever I encounter difficulties in reading or face academic setbacks."*

**Creating Motivation with the Help of Educational Authorities**

The narratives of three highly educated participants (Ali, Danial, and Fatemeh) underscored the transformative impact of having motivating teachers. These individuals recounted how thepresence and support of these educators ignited their academic success. These teachers recognised and celebrated their students' abilities, thus inspiring greater effort and dedication to their studies and examinations. Conversely, the teenagers who left school shared experiences of feeling unrecognised and misunderstood in educational settings, prompting them to withdraw. It was beyond the traditional classroom environment where their capabilities found acknowledgment and fostered stable careers. A few illustrative responses include:

**Fariba**

> *"Since my early years in elementary school, I frequented counseling centers at my teachers' behest. Despite numerous assessments and hours of coaching, I struggled in exams. I endured criticism from teachers and faced isolation from classmates who viewed me as a lazy student with mental issues. Despite my burgeoning talent for drawing, it went largely unnoticed. The incessant ridicule and lack of support eventually led my mother, a hairdresser, to withdraw me from school. Under her guidance, I discovered my passion and aptitude for hairdressing, cementing my resolve to steer clear of an educational environment that had caused me immense distress."*

**Hamidreza**

> *"End-of-year exams became a source of immense stress for both myself and my mother. While I excelled in home-based studies, my performance during exams* was

*hindered by memory recall challenges. My mother often requested oral exams, to which some teachers reluctantly acceded. Despite these accommodations, I encountered criticism from school authorities. Consequently, no teacher was eager to have me in their class."*

**Fatemeh**

*"My art teacher unearthed my remarkable drawing talent during middle school, despite my less-than-stellar academic performance. She celebrated my abilities by awarding me my first prize and offering public commendations in front of my peers. This transformational experience reshaped my outlook on education, igniting a newfound dedication to excel in all my assignments, especially within the realm of art."*

**The Impact of Hands-On Experiences on Professional Development**

All three dyslexic groups emphasised the superior value of hands-on experiences over theoretical education. Even those with academic backgrounds recognised the pivotal role played by practical work in their growth and development. Dyslexic dropouts frequently made strides through trial and error, benefiting from constructive feedback gleaned from hands-on tasks and their innate creativity. Teenagers on the verge of leaving school also found books inadequate and turned to online resources like Google, YouTube, Instagram, and Telegram for self-guided learning. Notable excerpts from their narratives elucidate this theme:

**Maryam**

*"During a particularly engrossing evening, I lost track of time while crafting a dress tailored to a customer's specifications. I meticulously stitched and revised the pattern until dawn broke. Once my mind becomes fixated on a pattern, I'm driven to perfect it. Without formal training, I've honed my skills through iterative practice. I now possess the proficiency to sew garments flawlessly, obviating the need for frequent fittings."*

**Ahmad**

*"Upon entering the Faculty of Arts after high school, I finally gained unrestricted access to pursuits that captivated my imagination. It was akin to a prison break. The practical coursework in the faculty provided me with ample opportunities to showcase the visual aspects of my mind. This daily exposure to diverse facets of my cognitive landscape invigorated me, enabling me to translate mental images into tangible creations without constraints—an apex of my talents, particularly in character design and animation."*

**Danial**

*" In my workplace, I frequently come up with unconventional yet elegantly simple solutions to challenges, especially during problem-solving exercises. These solutions typically stem from the knowledge I've gained through hands-on experience and curiosity, rather than from books, formal education, or university courses. These personal experiences, combined with my thought processes, often lead me to solutions that fall outside the conventional framework, eluding the understanding of others. For a long time, I assumed that this ability was something everyone possessed. However, over the course of my professional experiences, I've come to recognize it as a unique mental attribute. I've often asked my colleagues, "Did you ever consider this perspective?" only to receive a unanimous "No" in response.*

**Reza**

*"I've never pored over a single page of a manual for repairing vacuum cleaners or TVs. Limited internet access also prevented me from capitalising on online tutorials. I left high school early, believing it wouldn't serve my purpose. Instead, I've cultivated my skills through hands-on experience. Each device has served as my teacher, guiding me through disassembly and reassembly, troubleshooting, and repair through trial and error. I can mentally dissect a car engine, piece by piece, and rectify any issues before reassembling it. My sole challenge lies in becoming so engrossed in a task that I lose track of time, dedicating hours to a single project."*

**Arash**

*"I was perpetually drawn to my father's auto repair shop more than to my homework. The allure of solving the electrical intricacies of cars held my fascination. I'd rush through my assignments so my father would assume I'd finished and permit me to join him at the shop. There, I'd spend my afternoons observing and learning from my father. As time passed, he entrusted me with increasingly complex mechanical tasks, even soliciting my assistance with challenges he couldn't overcome in high-end and foreign vehicles. This evolution ultimately eradicated the need for a high school diploma in my chosen profession."*

## CONCLUDING COMMENTS

Students with dyslexia often encounter both academic challenges resulting from a lack of proper diagnosis and education and emotional difficulties throughout their schooling years (Claessen et al., 2020; Alexander-Passe, 2018; Burden, 2008; Scott, 2016). While some individuals with dyslexia manage to pursue further education using compensatory techniques (Stein, 2023), others decide to discontinue their education (Al-Lamki, 2012).

The findings of this study, conducted in Iran, highlight that out of the 13 dyslexic individuals examined, five dyslexic teenagers are currently at risk of dropping out, and four adult dyslexics dropped out after completing elementary school. Almost all of them reported facing negative emotional experiences.

In line with the findings of Gallagher et al. (2020) and Livingston et al. (2018) the interviews conducted with individuals diagnosed with dyslexia revealed a common theme of delayed and insufficient diagnosis, along with inadequate education, resulting in substantial cognitive and educational challenges. Furthermore, it was observed that their teachers had an incomplete understanding of their conditions, as supported by previous studies (Washburn et al., 2011; Worthy et al., 2016; White et al., 2020). This aligns with prior research, which has identified a lack of accurate diagnosis and insufficient knowledge of dyslexia as the primary educational barriers faced by these individuals (Gibbs & Elliott, 2015; Peltier et al., 2022; Sümer Dodur & Altindağ Kumaş, 2020; Washburn et al., 2017). The interviews conducted also shed light on the persisting negative emotional experiences and traumas reported by some dyslexic individuals, as documented by Alexander-Passe (2018).

A significant finding of this research is the identification of visual-spatial abilities as a common characteristic among individuals with dyslexia. This inclination towards visual-spatial fields as career choices can be attributed to two hypotheses. First, dyslexics may possess a natural advantage in visual-spatial abilities and are drawn to careers that leverage this skill (Bacon et al., 2013; Chakravarty, 2009; Cooper, 2009; Kannangara, 2018; Kapoula et al., 2016; Shaywitz & Shaywitz, 2020). Second, dyslexics may opt for visual-spatial careers as a compensatory measure for their cognitive limitations in verbal ability (Winner et al., 2001). However, further research is necessary to gain a deeper understanding of these assumptions. Most existing studies on dyslexic careers have predominantly focused on adults with dyslexia who pursued higher education and attended university (Anderson & Shaw, 2020; Franks & Frederick, 2013; Hickman & Brens, 2014; Longobardi et al., 2019; MacCullagh et al., 2016).In this study, we made a noteworthy discovery regarding the participants who either dropped out of school or have been out of school for some time. It was found that they have transitioned into careers that heavily rely on visual-spatial abilities. Out of the 13 individuals whose occupations were examined, 9 (comprising 5 teenagers and 4 adults) did not receive any formal education or specific training related to their chosen or preferred jobs. The diverse range of occupations among these participants includes character designer/animator, media-related technician, design teacher, designer, tailor, car mechanic, factory internal director/entrepreneur, car repairman/electrical appliance repairman/interior decorator, hairdresser, supermarket accountant, designer/painter/illustrator, cattleman, and auto mechanic trainee.

It's noteworthy that except for accounting, the occupations in question place a higher premium on visual-spatial abilities as opposed to verbal abilities. This observation is in

line with previous research studies conducted by Alden and Pollock in 2011, Bacon and Bennett in 2012, Hickman and Brens in 2014, Kannangara in 2018, Miller and Miller in 2013, Schneps et al. in 2011, and West in 2022 .During an interview with Iman, a teenager who had left school but was working as a supermarket accountant, we uncovered an intriguing facet of his skill set. He possessed an exceptional visual memory, to the extent that his manager affectionately dubbed him the "price and accounting ledger." This nickname underscores the strong link between his proficiency in accounting and his remarkable visual memory. In Iman's case, his visual-spatial abilities were a key factor contributing to his success in the field of accounting, a correlation that aligns with the broader findings in the aforementioned research.

Our research provides valuable support for the idea that individuals with dyslexia are not limited to those with a university education when it comes to their attraction to visual-spatial careers. This attraction extends to teenagers and adults who, for various reasons, may have left the traditional school system. These findings emphasise the broad applicability of this trend among dyslexics, spanning different educational backgrounds and life stages. Nonetheless, it's important to acknowledge that while our research sheds light on this phenomenon, further investigation is warranted to enhance the robustness of these conclusions. Additional studies, as suggested by experts such as Gilger (2017) and Moojen et al. (2020), can help to verify and expand upon our findings, offering a more comprehensive understanding of the relationship between dyslexia and career choices, particularly in the context of visual-spatial occupations. Such research can contribute to the development of more targeted and effective interventions and support systems for individuals with dyslexia, regardless of their educational trajectories.

A crucial area that calls for deeper investigation pertains to the cognitive factors motivating individuals with dyslexia to pursue specific professions, notably those in higher education- dependent fields like medicine. It's of paramount importance not to assume that these professions, including medicine and law, rely exclusively on verbal aptitude while overlooking the significance of visual-spatial skills. During our interviews, we encountered two notable instances where individuals exhibited a profound fascination with the structural aspects of subjects like chemistry, biology, and even grammar. This observation finds support in the experiences of accomplished dyslexics and Nobel Prize laureates, as detailed in the works of Shaywitz and Shaywitz (2020) and West(2022). This underscores the fact that some individuals with dyslexia may excel in fields requiring a deep understanding of intricate structures and concepts, challenging the misconception that dyslexia predominantly hinders verbal abilities and career options. Further exploration of these cognitive factors and their relationship with career preferences can offer valuable insights into the diverse strengths and talents of individuals with dyslexia.

The interviews yielded a clear insight: the participants' attraction to visual-spatial occupations was not driven by a need to compensate for verbal deficiencies. Instead, it

was rooted in their natural visual-spatial aptitudes, which had been evident even before they entered formal education. Furthermore, they actively nurtured and pursued their interests in these areas, a pattern that extended to both dyslexics who left school prematurely, as well as those who pursued higher education. Remarkably, many of these individuals perceived the traditional school system as a barrier to their abilities. It was only when they reached the university level that they could fully embrace and actively pursue careers in visual-spatial fields.

This recurring theme among dyslexics is consistent with the findings of prior studies, including those conducted by Alexander-Passe (2015 & 2016), Davis and Braun (2010), and West (2014 & 2022). It underscores the notion that, for individuals with dyslexia, their visual-spatial talents often emerge as strengths and can be a driving force behind their career choices and academic success, particularly in settings where their abilities are not hindered but rather encouraged.

During the interviews conducted with dyslexics who pursued higher education, another noteworthy observation emerged regarding the presence of a supportive figure who played a pivotal role in their academic journey. This individual, often a teacher, recognised their potential and encouraged them to pursue their interests. However, among dyslexics who dropped out of school, whether as teenagers or adults, such supportive figures were not commonly reported. Instead, they frequently expressed feelings of being misunderstood and unsupported during their school years. Only two of the dyslexic individuals in the study did not encounter significant difficulties in school and were diagnosed with dyslexia in adulthood by chance. The majority of participants shared their experiences of emotional struggles throughout their educational journey (Anderson and Shaw, 2020; Livingston et al., 2018; Scott, 2016).In summary, based on the interviews conducted with both educated dyslexics and those who dropped out of school, several key findings emerged that greatly influence their academic and career trajectories. These factors include the presence of visual-spatial cognitive abilities, the impact of supportive teachers, and the recognition and understanding of dyslexia within the educational system. The absence of support and recognition can lead to difficulties in school and eventual dropout, whereas having the necessary support can lead to academic success and the pursuit of careers aligned with visual-spatial abilities. Further investigations are warranted to enhance our understanding of dyslexics' needs in both education and career contexts and to provide better support and guidance.

## LIMITATIONS

The research conducted in this study is hindered by limited sample size. To enhance the credibility and validity of the findings, it is crucial to obtain a larger and more diverse sample of individuals who are school dropouts with dyslexia. Moreover, surveying various job sectors is essential to gain insights into their preferred types of employment. In addition, the negative stigma associated with dyslexia creates a significant obstacle

as it leads many accomplished dyslexics to hide their condition from colleagues and their surroundings. The concealment of dyslexia among successful individuals presents a notable hurdle in obtaining a more extensive sample for comprehensive analysis and exploration purposes.

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