Listening to the Voice of Dyslexic Students at a Small, Vocational Higher Education Institution to Promote Successful Inclusive Practice in the 21st Century

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Abstract—**Vocational University has 20% of the student population with a specific learning difficulty. The UK Government will cut the Disabled Students' Allowance by 70% targeting students with learning disabilities. Attending higher education may become unviable due to the removal of financial support. This paper aims to investigate difficulties that students encounter utilising a dyslexic student survey. 43 questionnaires were collected and analysed using Pearson's Correlation, Chi-square and determining key themes in open questions. Results show dyslexic students need to read more for pleasure to increase their lexicography and topic understanding. Higher education institutions need to implement strategies to empower students and lecturers to be aware of learning styles. Staff need to reduce the speed of delivery of lectures and be more approachable to students. Examinations should be reduced and course-work increased to be more inclusive. A lecturer/support staff/student feedback loop should be implemented to further improve inclusivity. Further research should be undertaken with a larger student sample and include lecturers' perspectives on learning difficulties.**

Index Terms—**dyslexia, higher education, teaching, learning**

I. Introduction

With the proposed Disabled Students' Allowance (DSA) cuts Higher Education Institutions (H.E.) will be expected to bear more responsibility for providing support as students with specific learning difficulties, such as dyslexia, will be targeted. Support structures will need implementing by H.E. to cover anticipated cuts in funding. This will affect H.E. with a higher proportion of enrolled students with disabilities. The total percentage of dyslexic students enrolled in H.E. in the U.K. is 6.5% [1] whereas The British Dyslexia Association [2] state that 10% of the U.K. population are dyslexic. The Vocational University (VU) has 19.4% of students with dyslexia and has consistently remained in the top ten UK universities with the most enrolled dyslexic students. This paper will look into dyslexic students' opinions on the difficulties that they encounter and how they can be best supported in their learning environment. It will also try to discover if any of the difficulties could be designed out within the teaching and learning environment to improve inclusivity.

II. Literature Review

A. Higher Education Regulations on Inclusivity and Support

Prior to 1993 there was little systematic support from H.E. for disabled students [3]. Disability Premium awarded funding to H.E. relating to the extra costs associated with student recruitment from marginalised groups which has led to widening participation programmes [3], [4] resulting in increased numbers of disabled students [5].

Dyslexia was recognised under the Disability Discrimination Act (DDA) 1995 [6] although education was exempt [4]. Ref. [4] state that a code of practice was introduced in 1999 by the Quality Assurance Agency to ensure equality of opportunity to access learning experiences. In 2001 the DDA was amended to include education through the Special Educational Needs & Disability Act (SENDA) where discrimination was determined by not making reasonable adjustments [4]. In 2006 a Disability Equality of Duty was introduced which placed an onus on institutions to be proactive to ensure fairness and equality for disabled people [4]. Dyslexia was legally considered a disability by the Equality Act (2010) where establishments had to make adjustments to ensure equality of opportunity [7].

B. Higher Education Current Situation

There are an increasing number of dyslexic students enrolling in H.E. [8] with a 40% increase in diagnosis and detection rates over the last five years [9]. Students need to have a recognised diagnosis to be able to apply for Disabled Students' Allowances (DSA) funding [2]. DSA provides monetary help towards specialist equipment, note takers and amanuensis [10].

Post cuts, H.E. will be expected to bear more responsibility and invest in support [11] with some H.E. more heavily hit due to higher percentages of enrolled disabled students [10]. The proposed 70% cuts to DSA target students with specific learning difficulties so attending university may become unviable without

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support which could increase drop-out rates and lower academic achievement [10]. As grants are not means tested students from lower socio-economic groups will be more affected [10].

Higher levels of dyslexic students withdrew within their first year compared to non-dyslexic students although, with appropriate support, they match them on completion rates [6]. 25% of disabled people do not disclose disabilities on university applications as they fear discrimination by not being offered a place [4]. The cuts may encourage disability non-disclosure which could affect recruitment of disabled students [10]. Without relevant support there is a risk dyslexic students will obtain a lower class degree [12], [13]. This could entail student needs not being fulfilled and greater financial burdens on H.E. due to difficulties in budgeting and providing support for "invisible" students.

Cuts will be implemented in the 2016/17 academic year to enable H.E. to make reasonable adjustments for disabled students, particularly those not needing medical help [11]. Students will have to provide £200 towards the cost of a new computer and printers and consumables will no longer be automatically provided [11] thus increasing H.E. budgets due to expected provision for printing services under reasonable adjustments.

C. Dyslexia Challenges

Dyslexia includes cognitive, organizational, analytical, attention, concentration and synthesis difficulties [14]. Difficulties in information processing, working memory and motor skills affect reading, spelling, speech, writing, numeracy and behaviour [13] increasing anxiousness, frustration and embarrassment [15]. Dyslexic students also have problems with memorisation, sequences, time keeping, concentration and word tasks so work becomes disjointed due to problems remembering sequential information [13]. Dyslexic students should be taught to understand the whole concept to encourage deeper learning and to be more spontaneous to develop a learning style where support should be tailored.

Dyslexic students do not have less general intelligence, problem solving and reasoning skills or visual memory [8]. Dyslexia has a common underpinning involving weak phonological and orthographical [8] coding including manifestations individual to each person [16]. Phonological and orthographical decoding also present difficulties with the written letters in words, the associated sound and what the word actually means [17]. Phonological difficulties include pronunciation problems causing embarrassment affecting self-confidence and increasing anxiety [15]. Dyslexic students think holistically offering creative and innovative solutions helping to compensate for their weaker phonological and auditory capacity [18]. Learning environments should be adapted by lecturers to suit dyslexic students which would not necessarily disadvantage a non-dyslexic student.

D. Dyslexia and Difficulties in Higher Education

Attending university is an initial step for students to form their individual and social identity [3]. Students feel anxious of stigmatisation that they may be perceived as unintelligent impacting their student identity [13]. Dyslexic students pursue H.E. to promote self-worth and improve future employability and earning potential [19]. They can find the transition to university stressful and difficult due to a lack of direction, worldly knowledge and not knowing how they will be assessed and what attitudinal and disability awareness barriers they may face [4], [6], [20].

Dyslexic students have difficulties that include: note-taking; planning and writing assessments; written expression and grammar [16], [18], [21]; reading and understanding new terminology; grasping the main concepts of text [22]; revising; communicating knowledge in examinations [23]; forgetting names and facts even if familiar; meeting deadlines and personal organisation. They can develop work avoidance tactics to disguise difficulties which become exacerbated over time [18]. Dyslexic students have difficulty understanding inferences from the written word and tend to conceptualise information in a visuospatial manner [6]. To read, a person has to simultaneously process text visually, phonologically and semantically which puts pressure on working memory [16], [17], [24].

Extensive reading and writing for university requires high level skills of fluency which can induce stress [13], [17]. In H.E. the written word is privileged and meritocratic and standard forms of assessment and evaluation practice disadvantage dyslexic students [20], [25], [26]. Writing is influenced by long term memory [27] and to write academically students utilise multiple cognitive processes which depend on working memory [28].

E. Lecturer's Attitudes and Awareness of Learning Styles

There is little research on staff perspectives of dyslexia although student learning can be affected by the attitudes and approaches of the lecturer [7] rather than institutional policies [4]. A lack of awareness can affect a student's learning experience but having a good rapport can enhance the experience and motivate students [29]. Lack of understanding can promote negative attitudes and low expectations of students especially if accompanied by a low awareness of learning styles [30]. Personal experience of dyslexia increases knowledge providing stimulus and cumulative interest benefitting the students with quality of support offered by teachers [7].

A lot of teaching in universities is auditory so sessions should include aspects of visual and experiential learning [6]. Lectures should be compartmentalised into small segments due to dyslexic students having short concentration spans [18]. Dyslexic students prefer lecture content to be student centred allowing expression and the ability to show competence and knowledge with multiple formats, enhanced with technology, enabling them to have control to self-pace their learning with individualised adjustments [29]. Teachers need to be aware of strategies to suit individual students' strengths and learning styles to encourage effective learning [24].

III. Research Aims and Objectives

There has been a lot of research undertaken on dyslexic students and the difficulties they encounter although there has been very little in asking their opinions on what lecturers do that helps them in the learning environment and conversely, what they find difficult. The aim of this research is to find out whether there is an opportunity to provide a more inclusive learning and teaching environment for dyslexic students. It will analyse the research to propose recommendations for dyslexic students, lecturers and H.E. to address problems that dyslexic students encounter and promote inclusivity.

IV. Methodology

A mixed methods research paradigm was followed with the use of anonymous, confidential questionnaires that were sent to dyslexic students exclusively. They contained dichotomous, Likert and open questions where students had the ability to provide extra feedback. Although more rich information is gathered from interviews, questionnaires can reach a wider audience in a shorter time although there is no opportunity to clarify questions or watch body language.

Questions were reduced after meetings with Learning Support and the Academic Registrar due to difficulties students encounter with the written word. This reduced the cross tabulations that could be performed. Language was made more simplistic to aid understanding. The open ended questions were put at the beginning of the survey to ensure maximum engagement.

Qualitative data analysis explores, analyses and reflects on the key themes and categories discovered from open ended questions [31] to develop an interpretation of meaning [32]. Inductive reasoning is then utilised to interpret the data by deconstructing the meaning of a phenomenon [33]. Inductive analysis and creative synthesis are used to find patterns, themes and inter-relationships within the data [34]. Content analysis using a stance of empathic neutrality enable the researcher to take a step back from the data to allow reflection and then create a narrative [31], [34].

Social constructionism enables the researcher to describe their findings from reality although there can be a misunderstanding with the interpretation of the person's views [32]. It shows how people understand and interpret situations which is underpinned by constructionist theory where meaning is constructed to support learning and teaching [32]. A phenomenological process was used with open ended questions to describe the way people see the world around them and their social realities [35]. Rich descriptions allow the researcher to understand the deeper layers of human knowledge [33]. An epistemological approach was taken for qualitative analysis which is a study of the nature of the knowledge and an ontological approach to the quantitative analysis which is a study of the reality of being [33].

The sampling technique used was non-probability purposive sampling to target dyslexic students to enable generation of theories from the student perspective [36]. A large sample size of 30 is the minimum size for statistical analysis with a larger size results being more reliable and valid [36]. Validity legitimises the data in mixed methods research and is ensured by having an appropriate timescale to analyse the results [36]. However, questionnaires are only valid if the respondents are honest. Non-response is not important due to the targeting method of the students.

The nominal dichotomous questions were examined using Spearman's Rank Correlation and moderate and above correlations were studied in more detail with Chi-square using IBM SPSS and Microsoft Excel. The rich information was analysed using content analysis where information was separated by question and then thematically categorised by hand picking out common phrases and words.

Limitations of this research is that it does not distinguish between different degree courses followed. Separate data for dyslexic students cannot be obtained from the VU central database so the results shown are for students with a specific learning difficulty (SpLD). There may be more students responding to the survey taught by the researcher due to their awareness of the researcher's interest which may skew the results.

V. Results

A. VU Statistics

VU has 19.4% of students with dyslexia [1]. Students from a rural background are marginally less likely to have SpLD than those from an urban back-ground. Students from a farming background are slightly more likely to have a SpLD than those from a non-farming background.

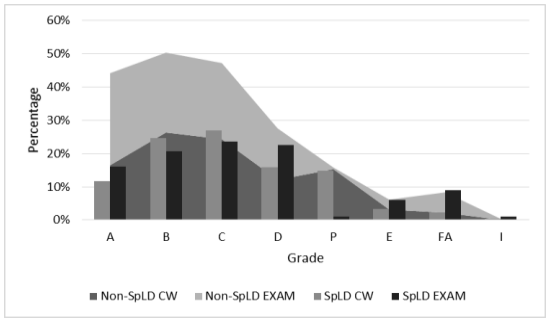

Figure 1. 2013/14 1st year grades on honours degree courses (adapted from VU, pers. comm. 2015)

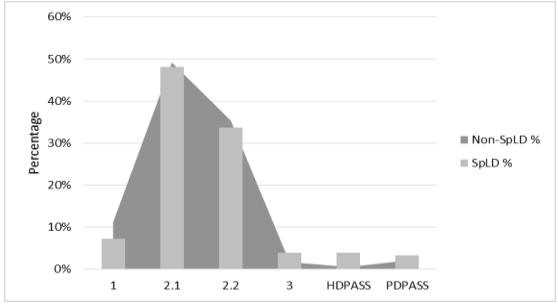

Figure 2. 2014 honours degree agreed classifications (adapted from VU, 2015)

Fig. 1 and Fig. 2 show the 1st year grades on an honours degree course and the final degree awards given for 2013/14.

Students with SpLD are less likely to achieve an A in their course work they are much more likely to have poor grades from exams compared to non-SpLD students.

Fig. 3 and Fig. 4 show 1st year grades and final degree awards on a foundation degree course.

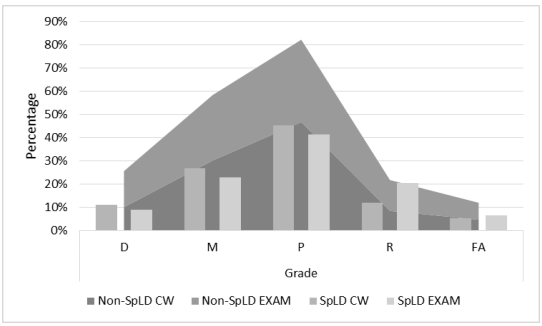

Figure 3. 2013/14 1st year grades on foundation degree courses (adapted from VU, 2015)

SpLD students are slightly more likely to receive a distinction in their first year course work than non-SpLD students but are more likely to perform worse in exams.

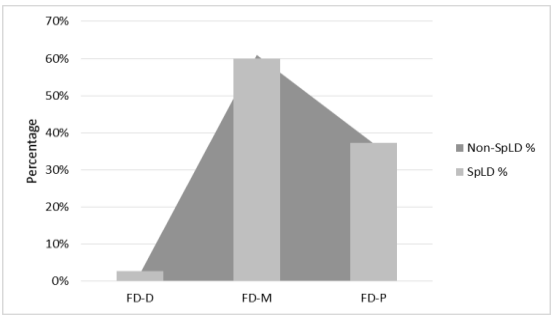

Figure 4. 2014 Foundation degree agreed classifications (adapted from VU, 2015)

SpLD students are more likely than non-SpLD students to get a distinction in a foundation degree.

B. Questionnaire Results – Family Diagnosis

65% of the 43 dyslexic students who responded to the questionnaire were female with over 50% diagnosed during the first two years at university with another 7% being diagnosed in further education colleges. 63% of respondents' immediate family attended university.

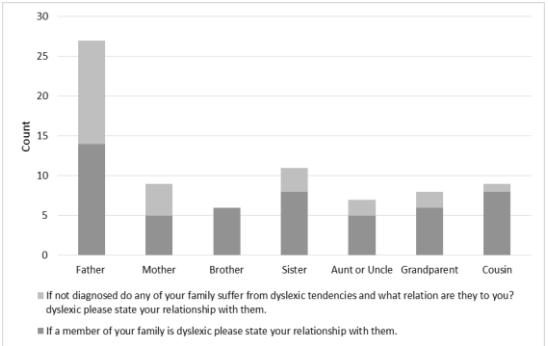

Figure 5. Frequency bar chart showing confirmed dyslexia and dyslexic tendencies with family members.

51% stated members of their family were diagnosed with dyslexia but an extra 33% of students said they had family with dyslexic tendencies in their direct family as shown in Fig. 5.

The main family member with or without diagnosed dyslexia is the father with a total of 27 (63%) followed by a sister at 26%.

C. Spearman's Rank Correlation and Chi-squared Tests

Spearman's rank correlation was undertaken to find strong or modest correlations between the variables. There were strong relationships of 0.760 between having problems with reading and reading speeds and 0.777 having problems with reading speed and losing their place when reading at p=0.000. Chi-squared tests were undertaken with strongly agree and agree merged along with strongly disagree and disagree. Due to the nature of questions validity of Chi-squared tests was reduced due to expected counts of less than 5. The test was significant with Chi-square being 30.441 with p=0.000 showing there is an association. Students are more likely to agree that they have problems with reading speed and losing their place when reading.

Negative modest correlations occurred only when linked to reading for pleasure.

42% of students read for pleasure and 81% of students lose their place when reading. Spearman's Rank Correlation was -0.563 significant at 0.01 level. Table I shows the Chi-squared results.

TABLE I. CHI-SQUARED TEST RESULTS OF STUDENTS WHO READ FOR PLEASURE AND IF THEY LOSE THEIR PLACE WHEN READING

			Do you lose your place when reading?	
			Yes	No
Do you read for pleasure?	Yes	Count	10	8
		Ex. Count	14.7	3.3
	No	Count	25	0
		Ex. Count	20.3	4.7

The test was significant with Chi-square being 10.874 with p=0.001. There is an association and students are more likely not to read for pleasure and lose their place when reading.

Comparing whether students read for pleasure and if reading became harder the longer they read Spearman's Rank Correlation was -0.426 significant at 0.01 level.

The Chi-square test was significant being 5.880 with p=0.015 showing an association. Students are more likely not to read for pleasure and find that reading becomes harder the longer they read and vice versa. Comparing reading for pleasure and whether they have problems with reading Spearman's Rank Correlation was -0.616 significant at 0.01 level.

The Chi-square test was significant being 20.811 with p=0.000 showing an association. Students are more likely not to read for pleasure and find problems with reading and vice versa.

Comparing reading for pleasure and reading speed Spearman's Rank Correlation was -0.599 significant at 0.01 level. The Chi-square test was significant being

8.935 with p=0.003 showing an association. Students who do not to read for pleasure are more likely to find they have problems with reading speed and vice versa.

84% of students stated that they missed words when reading and missed words when writing but thought they were there when they read over their work.

They tend to lose their place when reading due to being unfamiliar with the topic area and start to lose concentration which exacerbates the problem. Students spend extra time re-reading and can miss lines of text although some do follow the text with their finger. Some students read what they think is there rather than what is actually written. Difficulties encountered also include not being able to process the information due to reading speed.

D. Written Responses from Questionnaires

1) Do you find lecturers sympathetic towards your dyslexia?

One student stated lecturers were sympathetic to their dyslexia with just over half saying that some were. Seven students found lecturers unsympathetic. Just under half thought lecturers unaware of their dyslexia. One of the main problems students face is delivery speed of lectures which directly affects their note taking ability. They appreciate lecturers who speak slowly, are prepared to repeat information or explain topics differently due to difficulty with writing and listening concurrently. Having notes (including coloured paper) available before lectures is beneficial. Lecturers need to remain on a slide longer and have key words in bold. Power point slides should not be overloaded or spoken verbatim. Dyslexic students do not want attention drawn to themselves as they would feel uncomfortable and embarrassed by what they perceive as special treatment.

2) Please state any of the resources and technology used by lecturers that you find really helpful

Class participation, interactive group work, in-class quizzes and practicals keep students engaged. Real life scenarios are beneficial. Students like the Visual Learning Environment (VLE) to access lecture notes but would like additional, easily found material to support the topic. They like visual learning methods utilising videos and diagrams. A large proportion stated they prefer having notes with ample time to read and annotate. Some like gapped hand-outs but others do not. Approachable lecturers are appreciated.

3) Have you spoken to any of the lecturers about your dyslexia so that they can provide material in a format that you would understand easier?

Only five students have spoken to lecturers about dyslexia and the rest have not unless deemed necessary. Students state they find lecturers unapproachable and feel afraid to talk to them. They do not want attention drawn to them as they do not want pity. They feel embarrassed they cannot keep up in lectures and do not see how information could be provided in an alternative format. Two of the students had not approached lecturers but thought it might be a good idea.

4) Please state anything that the university could do to help you with your dyslexia

Students would like more support outside lectures to aid, for example, with assessments and exams. Refresher sessions on specialist technology would be desirable. Although some of the technology they have is beneficial they do not use it in class due to not wanting to stand out. Some find being told to use the guide on technologies not helpful as they need more support to understand. Students think lecturers should be aware they are dyslexic. Some students feel dyslexia should be taken into account when marking assignments and exams. Lecturers with poor handwriting should mark electronically and red pen should not be used. More text books are desirable as electronic versions are difficult to read. Independent learning should be provided in a format easy to understand. Support services provided by VU received appreciative feedback although there needs to be provision of a true "silent room". Notes taken by external agencies should relay what the lecturer actually says rather than repeating information available on slides.

5) Did you have any bad experiences at school from teachers or fellow pupils that you think are related to your dyslexia and if so, what happened?

Dyslexic students have been targeted by teachers for spelling mistakes including one student having repeated detentions. Being asked a question they did not understand or not given time to work out answers in front of peers they found exasperating. If they do not understand the material they get bored. They feel they are misunderstood and get into trouble so are excluded or put on report. There are instances where they are not recognised for subjects they do well in and they were not allowed to achieve their academic potential. They get demotivated by comments such as "you will never get to university" and when they are put in lower groups and excluded from subjects they are perceived to be weak at. They state they are often branded as stupid, dumb and lazy with one student having their English work ripped up in front of the class when they were 6. Teachers talk too fast so they cannot keep up. They experienced peer bullying and fellow students laughing at them when they cannot spell or being less able and to read out aloud. They struggled with exams and fellow pupils joked about extra time they were allowed. Few students had no bad experiences and learned to cope with their dyslexia.

E. Academic Requirements

Fig. 6 shows dichotomous responses in relation to problems they feel they encounter.

Students had most difficulties when having to write after re-reading information to pick out key concepts. Longer, unfamiliar words are difficult to understand. Software automatically changing misspelt words was frustrating due to not knowing they had incorrectly spelt words. Checking spelling whilst typing was a hindrance due to interruption of writing fluency. A lot of students rely on peers to proof read with respect to spelling, flow and punctuation. They use planning strategies to systematically structure their work when organising

essays and reports and state they do not have problems with general organisation. They panic when put under pressure and have difficulty expressing ideas orally or in writing but prior organisation and practice alleviates this. However, students find that, in assignments, they find it difficult to follow the brief and keep to the word limit.

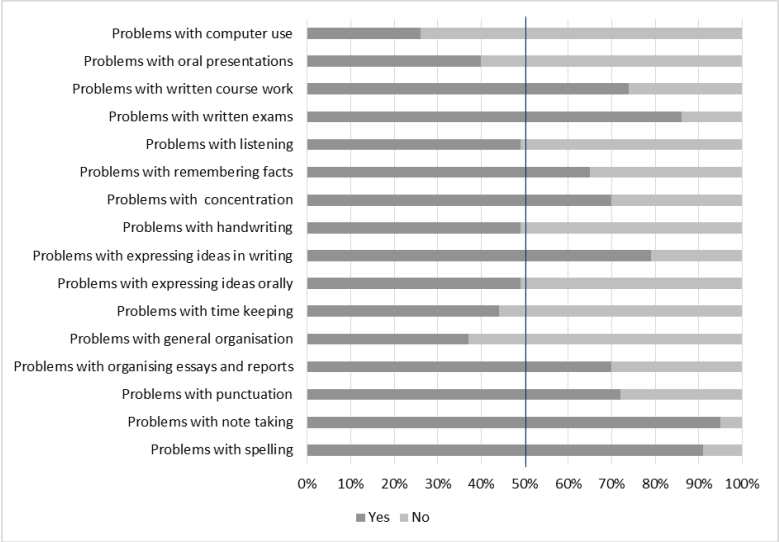

Figure 6. Students' views on problems associated with academic requirements.

F. Assistive Technology Usage

Assistive technology is not used to full capacity. Mind mapping software is used by over 50% of the students and nearly half adjust resources such as word to suit their particular problem.

VI. Discussion and Recommendations

Students have problems with written examinations which is reflected in the high proportion of students agreeing and in comparing marks to non-SpLD students. Examinations tend to rely on timed, written answers which can prejudice dyslexic students by causing anxiety and stress as reading and writing ability is tested [23]. Extra time allowance in exams is seen as a reasonable adjustment although there is debate on the benefits [23]. Examination questions are more inclusive if they are short answer due to problems dyslexic students have with reading, writing, spelling, communication and grammar.

Coursework provides dyslexic students opportunities to attain the similar grades. The way assessments are laid out is important as they should be sequential [18] and broken down into simplified chunks rather than have dense text [7]. This will also reduce the chance of ambiguous words being misinterpreted. Assignments could be supplemented with a mind map highlighting the key points as many dyslexic students use mind-mapping software when they plan so the concept is familiar.

85% of dyslexic students have dyslexia in the family with the largest group being fathers at 21% [21] which supports the findings although in VU research there are 63% of students' fathers who have tendencies of or confirmed dyslexia. This could be due to previous lower awareness and dyslexia tests not being widely available. Dyslexic students are likely to see tendencies in family members although none had noted them in brothers. This may imply dyslexia is discovered in boys at school. It is possible that girls cope better with their dyslexia so it is not noticed until they attend university and are expected to write academically. This could help account for the large amount of students diagnosed post 16 of 57%. Present availability of DSA could also influence this figure and future rates of dyslexia detection need to be studied as diagnosis may reduce due to the removal of monetary incentive.

Dyslexia can lead to having a reduced vocabulary. Poor word decoding can exacerbate literacy, spelling and comprehension problems [37] and due to difficulties decoding unfamiliar words extra time is spent on comprehension [22]. Dyslexic students should read for pleasure which would increase word decoding ability and reduce reading difficulties. It would increase reading speed and vocabulary. Reading requires verbal competence, memory, vocabulary and grammar skills which improve with more reading but dyslexic students find it difficult to engage in the cycle [16]. Slow reading can cause comprehension loss due to decay in encoding information and inaccurate word reading can also lead to poorer understanding due to degradation of the quality of information being read [38]. Dyslexic students find it difficult to skim text or find particular words and miss words when they read quickly reducing comprehension [16]. They need to develop strategies to progress efficient reading skills.

Most of the students found problems with the written word besides having reading problems. Dyslexic students need very good time management skills to ensure they have enough time to proof read or have it read to them. Reading for pleasure will also aid in developing a larger lexicography. However, research argues whether dyslexic students have lower lexicography abilities, organisation and written structure although they show slower writing ability using fewer words with more spelling mistakes [28]. They experience frustration that they can think, talk

and reason to higher levels than peers but are not perceived as academic due to weaker literacy skills [39]. Some dyslexic students actively seek support from peers to proof read and borrow notes [13] as they have accepted their condition [40] which supports this research. They need robust strategies in place to overcome impairments [16] and develop alternative methods of learning [18].

Dyslexic students have difficulty accessing verbal information from long term memory but can retrieve visual and non-verbal material although not with auditory accompaniment [41]. Students generally find lecturers unapproachable regarding their disability and do not realise there could be beneficial changes made to material. They stated they wanted hand-outs so they could "keep up" due to note-taking difficulties and problems understanding when having to spontaneously watch and listen especially if the lecturer talks too quickly. Lecturers need to speak slower and provide notes prior to the lecture. Dyslexic students tend not to be able to read and hear the word at the same time so encountering new words means breaking them down phonologically to understand [16]. Power point slides should be in Arial font, not overloaded with information with key words highlighted. Pictorial representations of concepts alongside text can be beneficial if lecturers draw learners' attention to appropriate features [42] as dyslexic students tend to learn kinaesthetically and visually. Material delivered too quickly presents difficulties especially if different types of media are changed without obvious transition which disrupts short term memory but, using media in an obvious way can reduce the amount of cognitive effort required and suit learning styles [41].

Students engaged with in-class participation is desirable and students like and learn from in class quizzes that are accessible after lectures. Using smart phones for quizzes can increase kinaesthetic aspects of learning. Using real life scenarios increases engagement in a subject area rather than students seeing material purely as theoretical or hypothetical. Lecturers should know more about dyslexia and make lectures multi-sensory to engage students [43]. Overlearning can provide multiple learning opportunities, using real world examples, in differing media to reduce problems associated with weak information retention [18]. Student centred lectures allows expression to show knowledge with multiple formats enhanced with technology which give control and the ability to self-pace learning with individualised adjustments [29]. Irrelevant information on VLEs should be avoided and they should be simply navigable providing precise information [44]. Students stated they wanted extra resources supporting the subject available. However, dyslexic students encounter problems with lecturers using VLEs in different ways [44]. VLEs should be used in similar ways by all lecturers to enable competent navigation by students.

Although assistive technology is available students do not use it to its potential which may be due to stigmatisation if only they use it. The type of technology used can have a significant effect on learning styles with respect to information retained and understood [41]. Refresher courses are needed on the technology rather than just one session. Although the technology would be beneficial to students they have forgotten how to use it or it is not slow such as text to speech software. Students need to understand their disability to tailor technology to suit their learning style. Metacognition promotes awareness of learning and should be encouraged to enable students to take control of their learning process and integrate prior knowledge [24].

Students were unaware if lecturers knew they had dyslexia. They feel there is insufficient communication between study units, support staff and academic departments [12], [13]. Teacher and peer awareness need increasing to enhance expectations and enable dyslexia to be normalised [30]. VU should train staff about dyslexia so they are more aware of strengths and difficulties that dyslexic students face. Lecturers tend to be unaware of memory retention issues and note taking abilities so, should have access to inclusive training and support to implement strategies so students can achieve their academic potential [12]. Staff should be trained to promote a holistic, inclusive environment with support from H.E. due to extra time involvement [12].

Students teaching lecturers about dyslexia would be beneficial and lead to a collaborative on-going cyclical process. H.E. should aid in the provision of personal development models to assist students in succeeding in their course to obtain employability skills [4] and graduateness [45]. Technological advancement and economic evolution require training and development towards lifelong learning beneficial to the workplace [46] should be encouraged and supported by H.E.

Students encounter discrimination from an early age and this can reduce self-confidence especially in transitional periods from school to university. Dyslexic students at VU perform consistently lower in exams compared to non-dyslexic students. Considering some of the vocational courses at VU it could be a possible to design out examinations although problems may occur due to the extra time that staff would need to test learning outcomes. Further investigation is needed as to what exam types cause the most problems and if they were still needed, how could difficulties be designed out.

VII. Conclusion

There are many ways where learning material can be more inclusive to suit differing learning styles which would benefit all students. Lectures need to provide an overlearning experience with extra resources to supplement the topic. VU needs to promote the different learning styles with workshops being run in conjunction with students to teach lecturers what difficulties students encounter. Students also need to have an opportunity to state what suits their own particular learning style and lecturers need to be aware how to tailor their lectures. Extra time should be given to lecturers to develop their modules to include video, diagrams and relevant web-site links to promote self and peer learning which may necessitate the amount of material being taught. Further research is needed on lecturing staff on how they see the

learning environment with respect to dyslexic students especially as DSA is being cut which may lead to non-disclosure of disability from students. Introducing assistive technology into the class room could also enhance the learning experience of dyslexic students so they do not feel stigmatised. Students should be encouraged to discover where their own strengths and weaknesses lie.

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