



See me, hear me: Successes and challenges of students with invisible disabilities at university in Singapore

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Abstract

Singapore has undergone a gradual shift towards a social model of inclusive education since the Compulsory Education Act came into force in 2003 (Republic of Singapore, 2000). With the aim of supporting disabled students, the Singapore government has increasingly provided resources and facilities in schools (Ministry of Education Singapore, 2018), resulting in larger numbers of these students continuing to tertiary education. Eleven individual interviews were conducted with students with invisible disabilities studying at different universities across Singapore. Their lived experiences provides insights into their realities and concerns as they reflected on their first-year at university and the successes and challenges they encountered as students with disabilities. Whilst support has improved since the announcement of support offices at institutes of higher learning (Siau, 2014), challenges remain ranging from attitudes to academic barriers, from systemic hurdles to concerns about career prospects. This has implications for policy, practice and research at tertiary level in Singapore.

Keywords: challenges, invisible disability, special educational needs, successes, university

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INTRODUCTION AND CONTEXT

As Singapore continues to strive towards an increasingly inclusive education system, more students with special educational needs and disabilities (SEND) are meeting entry requirements and gaining university places. The small city state currently has six publicly funded autonomous universities. Each varying in age, size and specialist focus, over 65,000 students were enrolled across the six institutions in 2017 (Ministry of Education Singapore, 2017). Since 2014, each institute of higher learning (IHL), which include the universities, three Institutes of Technical Education (ITE) and five Polytechnics, is required to have a Disability Support Office (DSO) as well as information on their websites about disability support services. In addition, the SEN Fund provides financial aid for learning such as the purchase of assistive technology (AT) or hiring of note-takers and interpreters. Until 2020 this was only available to students with physical and sensory disabilities (Republic of Singapore, 2014). The scope has since been widened to include students with learning, social and behavioural differences studying at ITE and polytechnic (Republic of Singapore, 2020).

This study considered lived experiences of 26 students with SEND as they reflected on their first-year of studying at university in Singapore, where they discussed their strategies and perceived issues of concern. Participants' perspectives were contextualised through the historical background to education policy and provisions for the education of learners with disabilities in Singapore, alongside developments in education reforms. Although there were commonalities across all the participants, this article focuses on the unique experiences of eleven of the participants with "invisible disabilities", who made up 35% of the interviewees of the study.

Invisible Disabilities

Invisible disabilities frequently relates to learning and psychiatric challenges not initially or overtly visible (N. Brown & Leigh, 2018; Burgstahler & Doe, 2006). This group included those with learning differences, such as dyslexia, attention deficit disorder (ADD), autism spectrum disorder (ASD), and mental health conditions. The rationale for choosing this descriptor is the difference may not be overtly visible to others or that students "often do not associate learning difficulty with disability in the traditional sense of a visible malady" (Boyko & Chaplin, 2011, p. 3).

The Impact of SEND on University Experiences

Much research relevant to the field of inclusive education and first-year experiences of learners at IHL has been conducted in Australia, the UK, and the USA, although some research is beginning to emerge from Asia. Whilst numbers of students with disabilities in higher education are increasing, they are disproportionately lower in numbers, are more likely to drop out or achieve poorer outcomes (Brock, 2010; Ebersold, 2011; Fuller,

Healey, Bradley, & Hall, 2004). Many of these learners continue to face obstacles to pursuing higher education leading to the danger that disability is seen as a secondary issue or personal responsibility to be managed individually. When considering learners with invisible disabilities in their first year at IHL, several possible barriers have been identified: attitudinal, informational and communication, and systemic barriers.

Attitudinal barriers

One of the most significant barriers is misinformation and negative attitudes that arise. A lack of understanding, experience and preconceived ideas about disabilities is often at the root. Within the context of IHL, attitudinal barriers can come from staff, the student with SEND, as well as their peers. Attitudes of staff pose one of the biggest hurdles (Burgstahler & Doe, 2006; Fuller et al., 2004; Hong, 2015; King, 2014; Rigler, 2013). Most educators do not undergo formal teacher training at tertiary level, employed instead for their industry expertise or research capabilities.

Learners who are seen as different often experience isolation at IHL as their peers feel uncomfortable and unsure of how to interact (King, 2014). Additionally, stereotyping of disabilities may discourage learners with SEND from disclosing for fear of standing out from their peers (King, 2014). Learners often identify themselves by their limitations instead of their strengths (Rutherford, 2017), which has implications for those with SEND. Rutherford argues that "by defining themselves in negative terms, this is potentially damaging educationally, as it creates artificial barriers", causing the learner to feel they are not improving (2017, p. 167). However, research suggests the importance of learners registering their disability at the application stage so that the disability can be assessed and provisions negotiated (Taylor, Baskett, & Wren, 2010).

Information and communication barriers

Without collaboration between stakeholders and within institutions, lack of knowledge and access to information can create challenges. This may refer to the knowledge of teaching staff and support service providers, as well as to learners and parents. Multiple studies have highlighted the issue of lack of knowledge of IHL staff (Burgstahler & Doe, 2006; Hong, 2015; King, 2014; Matthews, 2009; Office of Special Education Programs, 2005). Staff often feel they lack training, particularly when working with students with invisible disabilities (Burgstahler & Doe, 2006). Consequently, educators may be hesitant to adapt their teaching to the variety of educational needs or to implement appropriate accommodations. Furthermore, there may be communication barriers within IHL due to ambiguous information provided by legislation leading to differences in opinion about what might constitute, for example, a "reasonable adjustment" (Mann & Burkinshaw, 2017, p. 117).

Learners with SEND may lack knowledge of their condition or their legal rights. In late

onset of psychiatric disabilities, students may experience their first illness at IHL and therefore fail to understand what they are experiencing, what they need, or their rights as individuals with a disability (Zimmerman, 2004).

With advances in technology, AT can provide essential aids to learners with SEND. Increasingly, courses are using blended approaches, with many IHL using learning management systems to post materials online. However, materials and courses may remain inaccessible to learners with SEND. For example, the organisation of information by using headings that serve as a structural guide is particularly important for learners with ADD who may be overwhelmed by a cluttered webpage (Burgstahler, 2015b).

Systemic barriers

The education system itself creates systemic barriers to learning. Although inclusive policies are in place in many countries, the establishment of disability services in IHL is often inadequate (Taylor et al., 2010). The underpinning ethos of inclusive education stems from a social model of disability, implying that barriers such as attitudes, information and other forms of discrimination are the cause of disadvantage rather than individual characteristics or deficits (Oliver, 1990). Morgan and Houghton argue, "This places responsibility on individual members of staff within institutions and the subjects to change and adapt their policies and practices, not the student" (2011, p. 8). Systemic barriers, therefore, may relate to legislative, economic, administrative or pedagogical barriers.

Much research has centred at the institutional level. Direct service interventions have been trialled (Milsom, 2007; Peters, 2011), including inclusive practices and Universal Design for Learning (UDL) (Burgstahler, 2015b; Carballo, Cotán, & Spinola-Elias, 2019; Lemm & Lee, 2019; Sanger, 2020), social theory of learning difference (Oram, 2018), models of communities of practice to create a sense of belonging (Meehan & Howells, 2018; Rutherford, 2017; Tobbell et al., 2020; Wenger, 1998) and the development of transition pedagogy (Kift, Nelson, & Clarke, 2010; Nelson, Creagh, Kift, & Clarke, 2014; Penn-Edwards & Donnison, 2014; Raw, Tonkin, Peterson, & Jones, 2015). Other research has focused on the individual preparation of learners with disabilities and the importance of self-advocacy, self-determination and self-awareness skills (Connor, 2012; Milsom, 2007; Milsom & Hartley, 2005).

METHODOLOGY

This project was a qualitative investigation into the experiences of learners with SEND reflecting on their first year at university in Singapore. The phenomenological collective case study was developed through perspectival approaches to data collection. Informed by analytic induction and modified grounded theory approaches, the purpose was to generate theory from the interview data. The overview of the relevant literature

allowed the construction of theory frames built on past research (Rueschemeyer, 2009, p. 29) to ensure that context was considered as hypotheses were formed and revised. The central aim was to develop explanatory theory about the provisions for and access to education for students with SEND at university in Singapore based on reflections of their first year of study. Analysis of the historical background through parliamentary debates, policy documents and relevant university webpages provided a contextual framework within which to develop an explanatory theory. Participants were asked to reflect on their intentions, strategies, expected outcomes and significance (Blackledge & Hunt, 1985).

Data Collection

Criterion sampling was used to recruit participants where cases that met specific criteria were considered (Miles, Huberman, & Saldaña, 2014). Participants needed to have completed at least 6 months of studies and be a student at one of the six autonomous universities in Singapore, and have a formal assessment of SEND which included physical, sensory and/or invisible disabilities. Contact with specialist organisations serving specific disability groups, such as the Dyslexia Association Singapore and SPD Serving People with Disabilities, was made to enlist their help. Each specialist organisation was asked if they could advertise the research. Snowball sampling became an additional option to enhance the capture of a meaningful sample (Patton, 1990). Since the pool of possible participants was small, it was necessary to ask participants for recommendations or introductions to others who qualified to participate in the study (Morse, 2007).

To help with the dissemination of information that could be used and shared across different social media, the Participant Information Form was embedded in a Google Form so that potential participants could read all the relevant information in one place and respond using their device if they wished to take part. The response to the Google Form was accepted as consent to participate.

FINDINGS

The Participants

Interviews took place over six months from September 2019 to April 2020 and data were collected from participants studying at five of the six autonomous universities. The majority of participants were in their early to mid-20s, studying a range of subjects across the sciences, arts, and humanities (see Table 1). Most were studying full-time at undergraduate level. Participants divided almost evenly between face-to-face and video conference interviews.

Table 1: Descriptive information for each participant including gender, age, SEND and university studies

Participant	Gender	Age	SEND	Year of study	Subject of study	Interview
P1	F	Late 20's	ADHD	2nd	Communication & psychology (PT)	Face-to-face
P2	M	20	ASD	1st	Food science	Face-to-face
P3	F	21	Mental health condition	3rd	Earth science	Face-to-face
P4	F	21	Mental health condition	3rd	Physical sciences	Tele-conferencing
P5	F	29	Mental health condition	3rd	Marketing & advertising	Tele-conferencing
P7	F	21	ADD	3rd	Psychology	Tele-conferencing
P17	M	22	ASD	1st	Social work	Tele-conferencing
P22	F	Early 20's	ASD	3rd	Digital art & animation	Face-to-face
P23	M	24	Dyslexia	1st	Supply chain management	Tele-conferencing
P24	M	26	ASD	4th	Life sciences	Tele-conferencing
P25	M	22	ASD	3rd	Chemical engineering	Tele-conferencing

Figure 1 lists the questions created for the semi-structured interviews, based on Blackledge and Hunt's framework (1985). Each participant was interviewed once and was given the opportunity to read through the transcription to add, delete or amend information. They were also offered a follow up meeting if they wished, although no one chose this option.

Intentions

1. What were your plans when you chose your course?
 - a. What helped you make your choice?
 - b. Did you look at webpages for disability support?
 - c. How important was your special educational need in making your choice?
2. Have your goals changed as a result of your experiences in your first year of study at university? Why? Why not?
3. How have your experiences in your university studies been different from those at school?
 - a. Can you give me some examples?

Strategies

4. What strategies/ways of coping did you use to help you succeed in your first year of studies? Examples?
5. What kinds of support does the university offer? Examples?
6. Have you registered with the DSO? Why/why not?
7. What kind of support is offered by the DSO?
8. How well does this support fit with your own strategies/ways of coping?

Outcomes

9. How effective do you think your strategies have been so far?
 - a. Academic results?
 - b. How successful or satisfied do you feel?
10. What was your greatest success last year / in your first year?
11. Did you disclose your educational needs to the university?
12. Did/Do you get external help?
13. What were the outcomes of your dealings with DSO and/or counselling services?
14. Is there anything you would like to change or improve?
 - a. How do you think you could do that?

Significance

15. How important was it to you to be accepted onto the course?
16. How important is it to you to succeed in the course?
17. How does your family feel about your studies?
 - a. How do they support you?
18. Do you feel that you have:
 - a. Become more independent?
 - b. Been included?
 - c. Been accepted by your lecturers and classmates?

Closing

- Do you have anything else that you would like to add?
Do you have any further questions that you would like to ask me?

Figure 1. Questions used as the basis for the semi-structured interviews.

Explanatory Theory

Grounded in the analysis of the interview data, it is proposed that students with SEND entering university move along a continuum of “Preparing, Transitioning and Arriving” with varying degrees of fluidity. Figure 2 demonstrates how this process is ongoing, cyclical and, therefore, unlikely to be unidirectional, especially during the transitioning and arriving phases. This may be due to various internal or external factors (Boyko & Chaplin, 2011). Internal breakthroughs might concern accepting limitations due to their condition, which, in turn, influences the choice of course or, for example, developing awareness of what they can manage and advocating their needs. Internal barriers may present as unsuccessful strategies or a lack of awareness about available support. External successes could result from a smooth transition through appropriate and timely support, whereas obstacles could be due to faulty information or inappropriate provision.

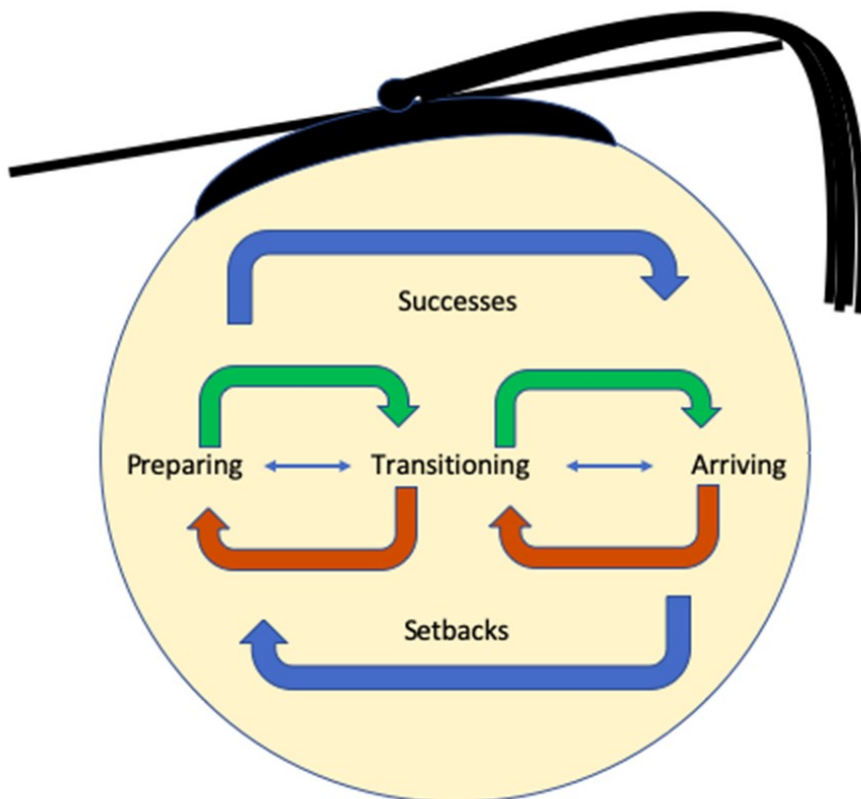


Figure 2. Model of explanatory theory for learners with SEND as they transition through their first year of university

Transition is complex. As learners move along the continuum, they may modify their original intentions in response to their encounters of transitioning. Not all students experience a sense of arriving as they face further challenges, whether due to internalised self-perceptions or external barriers. This process may not be present simultaneously in all aspects of a student's life. Instead, they may achieve a sense of arriving in some areas but continue to be caught in a cycle of transition, unable to find a way to move on and out of the whirlpool (Anderson, Goodman, & Schlossberg, 2014).

Intentions and Strategies

Preparatory intentions

There were multiple intentions when preparing to apply for and start a course. Some wanted to start university for which they met the entry requirements. Others researched support that the university explicitly offered to students with their particular disability. However, the factor most commonly offered was finding a course that interested them, but more importantly, also provided employment prospects upon graduation:

First, I just research[ed] about it, like check[ed] the websites of the University, and I found out what the modules are and whether it can really help me in some way for jobs or career, whether it will capture my interest [and] whether I can actually cope with doing the modules. And that's how it helped me to make my decision.

(Student with ADD)

Starting with internet searches for courses (Diamond, Vorley, Roberts, & Jones, 2012), many identified which universities appeared to offer access for students with SEND and the kind of support provided for specific disabilities. Others sought information about the breadth of resources available, attending open days and speaking to staff or current students about the course and expectations (Winter & Chapleo, 2017):

I prefer smaller schools just because ... there is more of a community. I think the most important factor is that they offer significant and very generous amounts of financial and mental health support as well.

(Student with mental health condition)

Success was most often described as acceptance on their choice of course, which validated the hard work needed to meet entry requirements and follow their dreams:

I guess it's always good to be accepted to a particular course because I know I have been preparing for it so much, and I know that someday I might be able to make it. And upon knowing that I have been accepted for my particular dream course, I see [it] as an opportunity to take the course that interests me the most.

(Student with ASD)

In preparing for their course, some students encountered setbacks. Gateway webpages of many universities gave the impression that support was only for those with physical or sensory disabilities, findings that resonate with the work by M. E. Wong (2014) conducted in Singapore. This resulted in some students not seeing themselves represented and possibly feeling they were not eligible for support:

When I was checking their website, they don't give a comprehensive list of who they will support. [...] I don't see my condition there. [...] They only say if you have physical disability or blindness, [you] can call for help, but there's nothing for people with word disorders, people with dyscalculia or people with ADHD. I don't know whether they would help me, so I just felt like maybe I don't bother.

(Student with ADD)

Academic intentions

Academic intentions were key drivers for many of the participants. For some, it was essential to retain consistently high grades, either due to intrinsic motivation or because it was a requirement for receiving a bursary. Some found that the university experience allowed them to transition to a different mindset, shifting from a focus on grades to the learning process, discovering new concepts, making time for exploration, and contemplating possible career paths (Rutherford, 2017). Finding a course they enjoyed, felt was of value and would lead to employment was crucial.

Apart from looking for courses that would allow them to achieve their desired academic outcomes, different strategies were employed to achieve these personal goals. Many relied on their self-advocacy skills to explain to lecturers and administrative staff what they needed to succeed (Milsom & Hartley, 2005; Peters, 2011). This sometimes included special considerations for the completion of assessment tasks. Two-way peer support (Boyko & Chaplin, 2011) was also highlighted as a valuable strategy for realising academic success.

Success could be measured through self-management (Connor, 2012) and the discovery or use of study skills strategies that helped with academic achievement (Rutherford, 2017), such as chunking tasks to help manage anxiety or pre-reading materials to prepare for lectures. For students with SEND who had mastered these skills, they did not always choose to seek disability support:

For me, I tried to train this thinking since young. Even in poly, even though I had extra time, I tried to finish the paper before that. I knew I [could] do it, so coming to Uni, I also wanted to give myself that challenge to complete all the papers on time, and so far, I have managed to do so.

(Student with dyslexia)

Some students continued to struggle with their academic intentions. For example, some seemed to have self-awareness of their condition rather than self-acceptance as they tried to act “normal” and avoided seeking assistance. This left them prone to stereotype threat (Good, Aronson, & Inzlicht, 2003), which may have led to difficulties managing workloads. For others, systemic barriers prevented learners from accessing appropriate support. For example, the lack of expertise (Yap, 2019), the narrow modes of delivery and assessment created further barriers (Fuller et al., 2004; Sanger, 2020), such as not having access to notes before a lecture or using participation grades with students who found it challenging to take part in group activities:

One more challenge was socialising and getting help from my classmates. I always feel that people think I'm very weird; maybe doing group work is so challenging. ... I want to be a better team member, and not to disappoint others, be less distracted. I still struggle with distraction. I still struggle with procrastination.

(Student with ADD)

Social intentions

Having transitioned from academically rigorous institutions, many modified their objectives towards social intentions to help achieve rounded outcomes and holistic development. Several expressed the desire to seek inclusion in campus life and supportive peers. Due to previous negative experiences, several saw the start of university as an opportunity to have a fresh start (Hong, 2015; Zimmerman, 2004):

I know that I have these conditions, but on the other hand, I also don't want it to be an excuse for me not doing well. So, in this sense, I decided just to go to Uni clean, without any advantages or things like this.

(Student with dyslexia)

These students described their successes in different ways, but most often, being able to take part in campus life was essential to feel they belonged to and were part of a social group or community of practice (Meehan & Howells, 2018; Rutherford, 2017; Tobbell et al., 2020; Wenger, 1998). They might have found this from their cohort, living in university accommodation, or being part of co-curricular activities (CCA). Others felt it was beneficial to open up about their challenges as a way to raise awareness and reduce stigma:

I feel that this particular student group, the people there, are apparently closest to me as compared to most of my course mates. I think we tend to spend more time together mainly through certain meetings or through preparing certain events.

(Student with ASD)

Course design was cited as a barrier to developing friendships, especially modular course structures where the cohort changes every three months. Social setbacks were more prevalent for those with ASD, where communication barriers could lead to misunderstandings and, in some cases, bullying:

All these nasty comments that were mentioned behind my back is a kind of a social bullying because it's like a social conformity of wanting me to be like the rest of them.
(Student with ASD)

Expected Outcomes and Significance

Professional development

The majority explained their expected outcome was to graduate and find a job by gaining meaningful experiences relevant to the job market. This is significant since most expressed the desire to be employed and achieve financial independence after graduation, linking to the long-standing notion that Singaporeans need to be self-supporting and contribute to society (Ministry of Social and Family Development Singapore, 2012):

I need to gain the skills required to work in the industry because if I don't have the skills, there's no way I can survive in the industry, which is very competitive.
(Student with ASD)

Achievements in the area of professional development were seen through managing their financial situation with part-time jobs or securing bursaries. The importance of finding internships to develop their professional profile was stressed (Burgstahler, Lopez, & Jirikowic, 2007; Ebersold, 2011), as well as staying on track to graduate. At times, moving to a different academic environment meant having to adjust academic expectations, whilst others described difficulties in securing or maintaining internships due to preconceived ideas about their disability.

Personal development

Participants tended to centre on holistic gains with the aim of acquiring new experiences to develop resilience, self-worth and self-advocacy (Milsom & Hartley, 2005; Peters, 2011). Many expressed a drive to overcome challenges and desire to be accepted by their peers and lecturers. The significance of such expectations was developing independence and autonomy (Doren, Gau, & Lindstrom, 2012) and having no limits set by others:

It's more of sympathy, which I also sometimes feel a bit annoyed. I understand where they're coming from. I feel they mean well, but I do not want to be sympathised with

but accepted as a person. (Student with dyslexia)

Achievements were expressed as overcoming internal barriers, persevering through challenging times and gaining independence. Developing a network of support through joining interest groups or participating in peer support groups (Batchelor, Pitman, Sharpington, Stock, & Cage, 2020) helped many feel a sense of inclusion. Other students had a contrasting experience where they felt excluded, fearing the stigma of opening up about their challenges with peers, stemming from negative past encounters. Some felt that support mechanisms were not in place (Fuller et al., 2004) or were not aware that support was available to facilitate learning and personal development:

I came in hoping that my mental health journey was going to be really good, and I would be safe, and it was all going to be okay. I think the reality is that it's actually been not quite so great just because of the environment, not necessarily because of the support infrastructure or anything. My goal coming into college was to really enjoy it, and my goal right now is to survive.

(Student with mental health condition)

Some students experienced the effect of Singapore's stress on meritocracy and academic competition as an adverse impact, compared to the support they experienced in CCA:

So why would they want to share so openly with you, as compared to the co-curricular activities where they are willing to veer into the area of feedback, where they know that you know if you're significantly challenged, they try to give you feedback to see how can we improve better. I think [the] CCA, in that sense, helped me a fair bit.

(Student with ASD)

Resource support

Resource support came from the DSO, university counsellors, external specialist organisations such as SGenable, and the family. Not all students with SEND sought support from the DSO. However, where provisions were made, the significance was seen in accommodations provided for assessment. Universities that set up the DSO as a one-stop-shop to organise support reduced the burden on students of having to contact numerous departments. Other students found flexible study options valuable (Department of Education and Training Australia, 2017), notably, if their condition deteriorated or adjustments were needed.

Families were acknowledged as important for financial support and non-judgemental emotional and practical backing such as providing meals. However, one participant explained their parents did not understand their needs.

Another thing is the language barrier because [my parents] aren't great in English.

They can speak English, but they aren't amazing at it. Talking about mental health requires a lot of niche terms. So, I think it's just very hard. They'll be like, "It's school that's stressful. Why are you so stressed?". I don't know how to explain it to them. It's not school, per se.

(Student with mental health condition)

In terms of starting the academic year, orientation programmes were helpful to meet new people and navigate the campus (Coccarelli, 2010; Kift et al., 2010). Some universities offered meet and greet sessions specifically for students registered with the DSO, often in the form of peer support groups, which provided reassurance.

Barriers to resource support were often due to a lack of cross-department communication, leaving students with the extra burden of explaining and constantly reminding staff and classmates of their needs (Milsom & Hartley, 2005; Taylor et al., 2010; Tobbell et al., 2020). When appropriate support was not available, students with SEND often found they had to work harder than their peers, resulting in not having the time to take part in social activities and exacerbating the sense of exclusion.

Financial support

Financial support was available for students with disabilities in the form of the SEN Fund, from specialist organisations in the form of grants and bursaries, and free counselling services provided by each university. Until the start of 2020, the SEN fund was available only to students with physical and sensory disabilities to pay for software, specialist equipment or services such as notetakers and interpreters (Republic of Singapore, 2020). Free counselling offered by each university provided a regular opportunity to receive help with ongoing mental health conditions for the first time:

Because I couldn't get help before I went to Uni, and during that time, I struggled a lot with my mental health. ... I couldn't really access mental health services because they're pretty expensive.

(Student with mental health condition)

Blackall and colleagues suggest financial support for a broader range of AT and support services could be instrumental to the academic achievement of a student with SEND (2013). Similarly, lack of financial support to access AT could increase the financial, as well as time burden on learners with SEND (Thomas, 2015). Students remarked that the funding criteria were too restrictive because at the time of the interviews, the fund was not available to students with invisible disabilities.

The contextual reality, revealed through the voices of students with SEND as they entered university, explored the numerous successes and setbacks that the participants articulated as they reflected on the strategies used in their first year of studies and their

expected outcomes. The successes and setbacks may have derived from internal drivers or barriers. Equally, external factors contributed to the achievements or the continued challenges that students faced.

IMPLICATIONS

Some of the challenges faced by students with SEND transitioning to IHL are internal (Folkman & Moskowitz, 2004). For example, some chose not to disclose their needs based on past experiences, affirming findings from research conducted in the UK, USA and South Africa (Beckett & Glazzard, 2019; Burgstahler & Doe, 2006; Vergunst & Swartz, 2020). This likely made it difficult for IHL to anticipate support mechanisms needed. Although the quality and level of support provided differed widely across the autonomous universities in Singapore, there are a number of implications based on the feedback from students and emergent evidence of successful and beneficial practice that could be replicated across IHL more consistently.

Institutional infrastructure

Students derive a sense of belonging from the college climate. Creating a welcoming atmosphere can be fostered through a physical environment that is clean, well-maintained and accessible. It is clear that varied and multiple spaces are needed to meet differing needs. Examples include “natural restorative” spaces to allow students to escape (Winter & Chapleo, 2017, p. 195), quiet, safe places for students to manage sensory overload, and areas where students can rest between classes when physical exhaustion is a factor.

As we all rely more heavily on ICT, institutions need to consider keeping their systems up to date and compatible in an attempt to achieve accessible (Burgstahler, 2015b) and seamless navigation. This entails regular training for staff so that faculty can use learning management systems and teaching tools to their full potential.

Institutional policies and practices

First impressions are essential (Winter & Chapleo, 2017). Although students are unlikely to base their choice of university solely on information found on university websites (Diamond et al., 2012), the internet is often the starting point and repeatedly returned to during the decision-making process. Visibility of services for students with SEND need refinement and enhanced targeting to improve communication with greater clarity and reach (C. Brown, Varley, & Pal, 2009). Relevant webpages need to be easily navigable (Harvey & Maruca, 2020) and provide more concise and broader ranging information about the disabilities and challenges supported; not only to identify services provided but also to address specific concerns (Beckett & Glazzard, 2019; Wong, 2014), sending the message that it is safe to raise anxieties or ask for help.

At a policy level, if the Government aims to increase educational pathways and hence diversity, institutions need to conduct research to understand the effectiveness of policies, resources and support so that measures can be tested and refined (Moody & Thomas, 2020). For example, systematic collection of statistical data about the number of students with SEND enrolling and graduating from university may help institutions make comparisons with the non-disabled population in order to investigate and address discrepancies (Ebersold, 2011). Such data would also be valuable at a global level as the UN aims to attain its commitment to the Sustainable Development Goals (United Nations, n.d.).

On a practical level, greater efforts could be made to streamline systems for registration with the DSO. This was evidenced through participants' experiences of bureaucratic gatekeeping, requiring students to have, for example, medical certificates to authenticate their claims (Mann & Burkinshaw, 2017), even though they had received assessments and support through school. Institutional policies should be developed to avoid inconsistencies between schools on accommodations and to improve cross-faculty communication (Taylor et al., 2010). It is vital that each department understands its role in supporting a student. If the DSO operates as the one-stop-shop and point of contact, this may avoid unresolved student requests for support passing back and forth between academic and administrative departments.

Institutions have a responsibility for the experience and success of students with SEND in higher education. Course design and flexible practices can help students to feel included (Gale & Parker, 2014; Grace & Gravestock, 2008; Tobbell et al., 2020). Courses could be reconceptualised to address the time needed for completion if a student with SEND cannot carry a standard full-time load. Alternative options could be offered, such as nested courses so that students have options to exit a course with meaningful qualifications (Department of Education and Training Australia, 2017, p. 9). Rigid practices, such as attendance requirements and modes of assessment, reduce the sense of autonomy (Tobbell et al., 2020) and may increase levels of anxiety. Offering a range of assessment modes to choose from to demonstrate learning may reduce the need for separate accommodations for students with SEND (Sanger, 2020; Thomas, 2015).

Assumptions that students move directly from school to university need to be dispelled (Baker & Irwin, 2021). Given that educational pathways to university have increased in Singapore, not all learners arrive with the necessary study skills (Rutherford, 2017). With successes of pre-commencement interviews to evaluate preparedness for study (Wood, Gray-Ganter, & Bailey, 2016) and extended orientation programmes (Raw et al., 2015), similar study skills programmes could be offered, which research suggests are most effective when provided before the start of the course or when embedded into the course structure (Jairam, 2020).

Since employment was a significant consideration for participants, many felt there should be more resources provided for both course and career advice (Blackall et al., 2013; Burgstahler et al., 2007; Ebersold, 2011). Specific disabilities may restrict students' course or module choices, and as a consequence, individuals might need more careful counselling over selection and workloads. Frustration was expressed at the lack of options for internships, implying limited employment opportunities in the future. IHL need to develop their relationships with industry, as well as Social Service Agencies to increase accessibility to relevant work experiences; a goal that the Singapore Government and organisations have voiced (Ministry of Social and Family Development Singapore, 2016).

Professional development

Professional development in two specific areas was highlighted in the interview data: training DSO staff and raising awareness amongst faculty and students. Although described as kind and approachable, participants often felt that DSO staff did not have the skills and knowledge or the time to effectively support students with varying needs. These findings are echoed in a similar study exploring perspectives of staff working as DSO at IHL in Singapore. Interviews with staff identified a number of issues, including; lack of manpower; staff having multiple responsibilities and functions; expressed needs for professional development; improved coordination between internal departments (Yap, 2019). Developing the role of the DSO with clear parameters, training and careers paths may help in these areas.

Regular and continued awareness-raising was also deemed essential to improve teaching and learning approaches and increase the confidence of academic and support staff in working with students with SEND. As attitudes towards disability in Singapore remain largely ill-informed, with the majority not knowing how to interact (Lien Foundation, 2016), staff need to learn to ask and to listen to students with SEND about their needs (Fuller et al., 2004) in a confidential and respectful manner. For example, lecturers should be mindful to give students access to teaching materials before a session to help with familiarisation of a topic or specialist language. As awareness of diverse needs increases, using the proactive approach of UDL may help to mitigate many of the negative experiences expressed by students (Burgstahler, 2015a; Carballo et al., 2019; Lemm & Lee, 2019; Sanger, 2020) and being treated as a "separate species" (Reeve, 2014, p. 107) or as someone with "separate educational needs" (TEDx, 2015).

Inclusion for students meant academic and non-academic support (Boyko & Chaplin, 2011) to develop a sense of belonging (Meehan & Howells, 2018; Thomas, 2015) and the desire to have the time, energy and finances to be able to participate in socially inclusive activities and develop relationships with their peers and staff. Caldwell describes belonging as "a place of safety, a place or community we recognise and in

which we feel recognised, valued – and to which we can contribute” (2017, p. 242). This is possible through positive and continued communication (Tobbell et al., 2020). Participants’ criticisms of multiple or tight deadlines and modular course structures imply that time is insufficient to develop rapport in short courses. With a focus on retention of learners, teaching and support staff need to create “conditions, opportunities, and expectations for ... engagement to occur” (Thomas, 2015, p. 147). This may include the adoption of transition pedagogy (Nelson et al., 2014), pre-commencement interviews (Wood et al., 2016) and the use of ice-breakers and “getting to know you” activities to develop rapport and encourage inclusive learning environments, as well as the need to continue to reach out and check in with students rather than assuming they are coping with student life.

Funding

Funding to support students with SEND should encompass resources, personnel, and grants (Department of Education and Training Australia, 2017; Kift et al., 2010; King, 2014; Raw et al., 2015; Wood et al., 2016). Being forced to source their own resources places a significant time burden on students with SEND, contributing to a consensus among participants that there is a need for more substantial numbers of personnel. DSO not only need time to work with students but also to keep up to date with technologies and inclusive practices to offer relevant support and ensure IHL have the appropriate infrastructure to support AT as part of Singapore’s dream of becoming a “Smart Nation” (Republic of Singapore, 2015, p. 12).

The narrow criteria for accessing the SEN Fund should be reconceptualised to address whatever AT is necessary to participate academically. Although the fund’s scope has been recently broadened, examples of students unable to make full use of the fund because they did not have assistive devices challenges the inclusivity of the SEN Fund as it currently operates. It should include all aids to assist life as a student, not just learning, so that addressing needs can be considered under one fund rather than having to access multiple sources.

Discrepancies in the criteria and allocation of the SEN Fund, such as excluding part-time students, are likely a result of universities internally allocating the funds in their budget and assuming that these students are working and can fund their own needs. These incongruities support the argument that the fund should come under the MOE’s auspices to reduce inconsistencies in allocation (Republic of Singapore, 2016). Finally, thresholds for funding should be reconsidered to be more realistic for specific groups to allow full participation in academic and social university life.

LIMITATIONS AND FUTURE RESEARCH

Although recruitment of participants was purposive, it relied on specialist organisations’

full consent to advertise the study to relevant recruits through specialist support sites and snowball recruitment. Participation was self-selected, preventing researcher bias in the recruitment process. However, recruitment relied on prospective participants becoming aware of the study and choosing to opt-in. Experiences at only five of the six autonomous universities are reflected in this study and neither was it possible to interview students who had started but quit their course. However, it was possible to interview participants with SEND who had chosen not to register or use the services of the DSO, adding a perspective as to why they had made this decision.

Given the limitations of the study, some areas could be considered for future research. As Singapore begins to collect more data about the numbers of people living with disability through the ten-yearly census, it may encourage the collection of quantitative data about students with disabilities continuing their studies at IHL, such as numbers, type of impairment, and retention and graduation rates. Since levels of attrition tend to be higher for students with SEND, locating participants who dropped out of their university studies may allow researchers to gain an understanding of the factors that contribute to such learners withdrawing from their studies. The recency of peer support groups set up in IHL to support mental wellbeing would be a further research area to explore the effectiveness in reducing stereotypes and creating more open and safe environments to discuss emotional needs (Batchelor et al., 2020).

CONCLUSION

It is interesting to note that the students' experiences in this study are not dissimilar to students with disabilities at university in other countries. Aspirations, such as wanting to study a subject that interests them, graduate, and find employment, as well as challenges encountered, seem to mimic many experienced by students with disabilities in the UK, for example (Blackall et al., 2013; Fuller et al., 2004).

It is hoped that government authorities, administrators and educators will enhance their knowledge base about the support needs of these students to address challenges of institutional infrastructure, institutional policies and practice, professional development needs and funding, as well as spark interest, to continue research in this field.

Professor Chan Heng Chee's analysis of the 2020 Singapore general election described the voting population as wanting "a kinder, gentler politics with support for diverse voices" (Yuen, 2020). As more learners with disabilities reach university, their future expectations are burgeoning, which warrants more consistent and coherent development in support and provision for these students. Maybe now is the time for the Singapore Government to update Article 12 of the Constitution so that people with disabilities are expressly included and protected under the forbidden classifications for discrimination.

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