**Proceedings of the Tenth International Conference on Conceptions of Library and Information Science, Ljubljana, Slovenia, June 16-19, 2019**

**Accessing learning resources: experiences of students with disability**

[**Hilary Yerbury,**](http://informationr.net/ir/24-4/colis/colis1929.html#author)[**Simon Darcy**](http://informationr.net/ir/24-4/colis/colis1929.html#author)**and**[**Nina Burridge**](http://informationr.net/ir/24-4/colis/colis1929.html#author)**.**

***Introduction.****This study investigates the experiences of students with disability in an Australian university as they engage in their online learning activities and asks the question: How can the experiences of these students help us to re-conceptualise what it means to access learning resources?****Method.****Students who had identified themselves as having a disability were invited to complete a questionnaire using the Qualtrics survey platform and usable responses were received from 200 students, of whom 26 agreed to take part in a semi-structured interview.****Analysis.****Descriptive statistics were derived through Qualtrics; qualitative data were analysed using Leximancer to identify key concepts supplemented by a discourse analytic approach to content analysis providing access to the language of the students.****Results.****Some barriers to accessing learning resources arose from incompatibilities in assistive technologies and from decisions made by staff, but a significant barrier was a lack of social capital.****Conclusions.****While policies are important in facilitating access to learning resources for students with disability and the skills and expertise of those involved are also significant, the strength of social relationships and the inequities resulting from unbalanced engagement in these relationships must be considered in any discussion of access and barriers to information.*

**Introduction**

Access to information and the barriers people face are significant topics in library and information science. They are also significant topics for universities providing educational programmes for students with disability, in spite of the many developments in policies, provision of supporting services and changes to the use of learning technologies. This study investigates the experiences of students with disability in an Australian university as they engage in the learning activities associated with their course of study and asks the question How can the experiences of these students help us to reconceptualise what it means to ‘access learning resources’? and undertake online learning activities within an increasingly online education sector?

**Conceptual context**

Several models of access to information have been developed, based around typologies of access or on barriers to access but there is agreement that they are under-developed ([Burnett, Jaeger and Thompson, 2008](http://informationr.net/ir/24-4/colis/colis1929.html#bur08); [Oltmann, 2010](http://informationr.net/ir/24-4/colis/colis1929.html%22%20%5Cl%20%22olt09)). In the context of use of the Internet and of the empowered citizen, Wilson ([2006](http://informationr.net/ir/24-4/colis/colis1929.html#wil06)) developed Dervin’s ([1973](http://informationr.net/ir/24-4/colis/colis1929.html#der73)) hierarchy of access, presenting a range of influences. His typology, which adds economic and technical considerations to the social, political, cognitive and personal concerns expressed in Dervin’s model, exemplifies a common approach presenting the notion of gap or lack, something which arises as a barrier to access. His model encompasses financial access – the ability to pay, cognitive access – the ability to understand how to use the information service, design access – the customisation which facilitates use, content access – the ability to engage with the content, production access – the ability to create one’s own content, and political access – the ability to interact with the producers of the information service, demonstrating that lack of ability on any aspect will hinder a user’s access. Burnett, Jaeger and Thompson ([2008](http://informationr.net/ir/24-4/colis/colis1929.html#bur08), p. 56) assert that in library and information science, access is frequently taken to encompass physical or intellectual aspects, with little attention paid to the social aspects of the concept of access.

Recent work by Ragnedda ([2017](http://informationr.net/ir/24-4/colis/colis1929.html#rag17); [2018](http://informationr.net/ir/24-4/colis/colis1929.html#rag18)) and Ragnedda and Ruiu ([2017](http://informationr.net/ir/24-4/colis/colis1929.html#rag17a)) has focussed on the social aspects of access, in the context of online activities. Their model uses Bourdieu’s notion of capital to identify gaps and inequalities arising from the use of online sources. Bourdieu’s notion of capital goes beyond the economic, to include social capital, as well as cultural and symbolic capital, as resources involved in the creation of the social world ([1986](http://informationr.net/ir/24-4/colis/colis1929.html#bou86)). He used this notion of capital to identify systemic inequalities in society, arguing that social capital belonged to the individual rather than to the collective of a community (which was cultural capital for him). Social capital is created through various forms of interaction with others and produces benefits for the individual; those unable to participate in such interactions are inevitably disadvantaged. The English-language literature on social capital is more likely to draw on Putnam’s concept of social capital, which considers it a collective resource, based on notions of trust, norms of reciprocity and networks of civic engagement ([Putnam 2000](http://informationr.net/ir/24-4/colis/colis1929.html#put00)). He identified two forms of social capital, bonding capital which exists between individuals who know each other well and have close social ties, and bridging capital, which exists among people who may not be closely linked but enables people to make links beyond their own social circles.

Adopting Bourdieu’s approach with its focus on the individual and the benefits which accrue to an individual as a result of their involvement in something, Ragnedda ([2017](http://informationr.net/ir/24-4/colis/colis1929.html#rag17)) and [Ragnedda and Ruiu, (](http://informationr.net/ir/24-4/colis/colis1929.html%22%20%5Cl%20%22rag18)[2017](http://informationr.net/ir/24-4/colis/colis1929.html#rag17a)) argue that the social benefits derived from use of online resources are influenced by one’s standing in a social system, and that social inequalities found in the off-line world are replicated in the digital world. Based on the three-tier digital divide model, they expand the notion of capital to include digital capital, the knowledge and skills to participate in online activities, and personal capital, a strong sense of self. Low digital capital leads to a limited capacity to take part in social networks and, as a consequence, difficulties in bringing together the online and offline worlds. Further, from a personal capital perspective, low digital capital is likely to lead to lower self-esteem, in turn affecting face-to-face interactions and from a cultural capital perspective, to minimise opportunities for sharing in the creation of new knowledge, in turn lessening the likelihood of using new knowledge in other contexts.

From a learning technologies perspective, in studies of students with dyslexia, Seale ([2013](http://informationr.net/ir/24-4/colis/colis1929.html#sea13)) suggests that access is too limited a concept when it focusses solely on the physical or intellectual aspects. Drawing from assumptions about the relationships between the use of learning resources and the learner, she notes that it is assumed that a ‘normal’ student is ‘self-sufficient’, so that students with disability have to work harder at being self-sufficient and this has implications for their use of time and the choices they make to become successful students. She proposes that key to understanding the experiences of students with disability in their engagement in learning online is social capital, which includes notions of empowerment and participation.

In disability studies, access is a key concept, which Kent et al. refer to as *‘proxies of equity’*. In the context of higher education, the emphasis is on access defined as *‘admission, enrolment and participation’*, where the purpose is to ensure that the student with disability is *‘treated on the same basis as a student without disability’* ([Kent et al., 2018](http://informationr.net/ir/24-4/colis/colis1929.html#ken18), p. 23). Two studies demonstrate how the individual is central to participation. Denhart ([2008](http://informationr.net/ir/24-4/colis/colis1929.html#den08)), in a study of students with learning disabilities, identified three barriers to success in tertiary study: being misunderstood by academic staff, being reluctant to ask for accommodation because of fear of stigmatisation and having to study longer than students without disability. Bambara et al. ([2009](http://informationr.net/ir/24-4/colis/colis1929.html#bam09)), taking a social perspective on participation in tertiary study, found that four themes emerged from the experiences of students with disability: isolation, that is feeling unable to connect with fellow students or with academic staff, academic challenge, that is feeling overwhelmed by the course content and requirements for the course of study, ownership, that is engagement with the course, its challenges and potential benefits, and acquiescence, that is the slow acknowledgement of the impact of the other three themes on the individual’s ability to study successfully.

**Study Context**

This study uses the experiences reported by students with disability in a single Australian university in mid-2017 to reflect on what it means to access learning resources; it considers how these reflections may lead to a refinement of conceptualisations of access. The phrase students with disability is used throughout this study, as it is acknowledged that many students identified more than one disability. Australian universities operate in a context that requires institutions to give explicit attention to the provision of educational opportunity to people with disability. This study focussed on the 1675 students registered with the Accessibility Services unit of an Australian university, making up about 3% of the total student body. These students were undertaking studies across a range of disciplines and levels of study. Like all students enrolled in the university, they also have access to the health service, including the counselling service. For an individual academic to know that a student is eligible to receive some level of accommodation, the student must complete three steps: register with Accessibility Services, request accommodation in a particular subject through Accessibility Services and notify the teaching staff. The accommodations that registered students receive include more time to complete assignments, access to assistive technologies, including note takers who attend lectures and tutorials either with or on behalf of the student, and customised assessment tasks, including special arrangements for examinations.

Data for this study were collected in two stages. First, students registered with Accessibility Services were invited by an email sent from staff in the unit to participate in an online questionnaire. Second, students participating in the online questionnaire were asked if they were willing to participate in a follow-up interview or extended email response. The questionnaire received 200 usable responses. It was undertaken through the Qualtrics survey platform which has been accredited for its accessibility for people with disabilities and is certified compliant with Section 508 of the US Rehabilitation Act ([1973](http://informationr.net/ir/24-4/colis/colis1929.html#der73)) as amended in 1998. The questionnaire collected basic demographic data as well as information about the course the student was studying and the nature of their disability or medical condition. In a mixture of Likert-type and multiple choice questions, students were asked about their use of information and communication technologies to support their learning, including the online learning and teaching platforms available through the university and to what extent students with disabilities were able to take advantage of the accommodations offered to help them. A number of open ended questions were also included to allow students to expand on their answers and explain the issues they faced in using learning resources. The second phase of data collection comprised 16 face-to-face interviews and 10 responses completed via email from students who agreed to provide more detail on their experiences.

The Qualtrics software produces descriptive statistics. For the open-ended questions from the questionnaire and for the interview data, data analysis was undertaken using Leximancer software as well as a discourse analytic approach to content analysis. Leximancer is a content analysis tool that is considered as a form of text mining and is based on the general idea that a word can be defined by its context in usage; from iterative process, concepts emerge. The discourse analytic approach, which identified key themes, reinforced key concepts, but at the same time was able to use the language of the students to provide a sense of their lived experience.

**Findings**

In the 200 valid responses, the most commonly reported primary disability was mental health (44.8%), followed by medical condition (20.8%) and learning (8.8%). Mobility (6.4%), hearing (3.6%) and vision (2.4%) were also mentioned. The respondents were spread across all faculties and study disciplines, approximately following the proportions across the population of students registered with Accessibility Services: Arts & Social Sciences 19.1%; Business 12.8%; Design, Architecture, Building 10.8%; Education 4.9%; Engineering & IT 9.7%; Health 12.2%; Law 12.2%; Science 14.6%; Not stated – 3.7%. The overwhelming majority of respondents (68.5%) were female, with 28.5% being male and 3% either reporting as non-binary or preferring not to say.

***What does it mean to ‘access learning resources’?***

The analysis of open-ended questions and the interviews indicates that students conceptualise access to learning in four ways. The first is concerned with the policy requirements of the university and how meeting those requirements may be impeded. The second is about being a competent student. The third is about being able to make use of the technologies that give access to learning resources. The fourth is concerned with participation in the learning activities of a degree programme that requires some level of face-to-face attendance and interaction.

***Access means knowing how the system works and meeting the bureaucratic requirements of the university system.***

The majority of respondents (72.4%) noted that they were familiar with the range of support available to them, although 16.8% were unsure and 10.7% stated they did not know. All respondents identified occasions when they had not disclosed their condition and therefore would not receive any accommodation, with 17.5% reporting that they rarely or never disclose. Although 39% have on occasion disclosed to their lecturers and tutors, only 14.9% have disclosed to their fellow students. Only 27.4% sought accommodation in all the subjects they studied, with 22.3% seeking no accommodation at all. Of those who sought some level of accommodation, 18.9% indicated that it was sometimes or never satisfactory. Reasons for not disclosing and therefore not seeking accommodations included not believing it would help (26.6%), not knowing they could do so (12.7%) and not needing or wanting accommodation (4.4%). Other reasons for not disclosing, extracted from the questionnaire responses included: *‘I was afraid of judgement from others’*; *‘I'm embarrassed’*; *‘there is a lot of stigma associated with mental health issues, so I prefer not to make it public knowledge’*; *‘I think my mobility is obvious so there wasn't a need to tell people’*.

***Access means being able to be a competent student***

All of the students who took part in the interviews or email follow-up had an idea of what it meant to be a *‘normal’*student. S11 considered herself *‘a normal person’*, who sometimes had difficult completing her studies. A questionnaire respondent noted *‘It is off-putting being labeled as disabled when I do not see myself this way’*. Most did not express their understandings as clearly or positively as S3, who said: *‘If I didn’t have the disability [poor vision], my brain is perfectly capable of turning in a perfect piece [of work]* ’. She explained how she sought assistance with completing the assessment task to an appropriate standard; *‘my lecturer asked if anyone wanted to help [with proof-reading] and one of the students said yes. The problem was that she did it for me at midnight, the night it was due’*. Instead, students focussed on what prevented them from being *‘normal*’; this included being affected by poor memory, being unable to sit for the duration of a lecture, having to arrange a timetable around hospital admissions, and taking a long time to complete a degree. Problems also faced by students without disability seem to be magnified; these included being organised, keeping up and meeting deadlines and knowing the protocols for each class.

The analysis by Leximancer identified time as a key concept for the students who took part in phase two of the study. Additional time to complete work was one of the accommodations available to most students. Students referred to their frustration with the extra time it took them to complete assessment tasks. A questionnaire respondent wrote:

*The effort we put into an assignment or exam takes 10 times more effort than someone that isn't suffering with an illness. Yet they get distinctions and above, and we are left with fails, or just passes.’*

Some were upset that some staff appeared to consider that they had poor time management skills, or were lazy, not recognising the impact of their disability, especially mental health issues, on their ability to complete the learning tasks. Others spoke of the need to study part time to be successful in their studies. Access to online materials allowed students to work at their own pace and provided some level of autonomy in their learning; face-to-face lectures often went too quickly for them to understand all of the material, but the online recorded lecture could be reviewed until the content was clear.

***Access means getting the technology to work.***

Technology affected access to learning resources in two ways, one related to the technology itself and one arising from decisions made by academic or other staff. Reponses indicate that students believe they have good digital skills, and take it for granted that they will use some form of technology to support their studies, whether a laptop computer (the most usual technology reported by students, n=143), a smart phone, mentioned by nearly as many students (n=116) or something else, such as a desk top computer or a tablet. Only a small number of students (11.29%) indicated that they had particular issues relating to the use of online technologies. Those found difficult to use by at least one student included the university website (It should be noted that at the time when data were collected in mid- to late-2017, the University had not yet incorporated the World Wide Web Consortium’s, (W3C) Web Content Accessibility Guidelines (WCAG), the accepted worldwide standard, into its website, a change made in October 2017.), the learning management system, a lecture recording programme, and various presentation technologies including Adobe. Only a small number of students use assistive technology (n=17), but more than half of these (n=10) had experienced problems, including a lack of compatibility between Dragon Naturally Speaking and the university’s Learning Management System and the automatically generated captioning system that often does not recognise technical terminology or has problems with accents that are not American. Affecting a larger group of students were the problems arising from decisions made by academics or other staff in the ways they configured the learning management system and other online learning resources. Lack of standardisation in the use of the Learning Management System was a particular issue, meaning that some students with disability have to learn a new structure and format for their online learning materials every semester and sometimes for every subject. Tardiness in providing access to the learning materials was a common cause of frustration.

***Access means taking part in the learning activities of a degree programme***

Meeting the university’s expectation of participation in face-to-face interactions, usually identified by the students as the need to get to class, was commonly considered an obstacle to learning. One of the main reasons was that not attending class prevented them from accessing the content of the lectures and this in turn affected their ability to complete the tutorial preparation. Students wrote and spoke about problems with regular attendance being detrimental to their study: *‘as a result of my inability to get here every single week, your [sic] out the window’*. The effort involved in getting to class was sometimes detrimental to learning: a student with ADHD reported that the long travel journey each day exacerbated problems with *‘organisation, concentration and being overwhelmed by sensory input’* (S22) so that the ability to use the learning resources provided in class was minimal.

Some students unable to attend classes on a regular basis received accommodation in the form of a note-taker, a service that involved another student being paid to attend the lecture and any tutorials and providing a written account. The ways the students spoke about the note-takers highlighted a significant difference between those students who saw notetaking as a service provided by the university (*‘notetaking assistance’* (S18)) and those who thought they were working with people with whom they should negotiate to establish clear goals and priorities (S19). *‘My notetakers were really great in trying to find out what notes would help me most’* (S20). *‘[A notetaker] … is not the most helpful’* because you have to wait for the notes and work through them before you can do the tutorial work or the assessment tasks (S18).

Access to a recorded lecture helped some students to overcome the problems involved in not being able to attend. According to one questionnaire respondent, *‘the online platform has been beneficial allowing me to access information easily and most importantly, due to my condition, often’*. Others recognised that this would have been a supportive mechanism for them, enabling them to prepare and/or to catch up with where they perceived other students to be. Some students favoured live streaming of classes, with the ability to ask questions from the remote location: *‘Live streaming of classes could make the difference in me being able to return to and complete my degree or not.’*

Social relationships were important to most students in facilitating their ability to take part in the learning activities of their degree programme, whether in the domestic sphere or in class. One student with mental health issues wrote about the importance of the support she received from her husband in looking after their children and running the household so that she *‘can focus solely on my studies’*. Another (S25) lamented the lack of social support, writing *‘I’ve been single for 17 years and it can be tough to go through life’s struggles alone’*.

For some students, though, the social relationships essential to the learning process brought their own problems. Those with issues of mental health seemed more likely to comment on problems that affected their social relationships with others than those with disability that was apparent to others, such as impaired vision, or problems with hearing or mobility. These problems arose from lack of class attendance, difficulties managing group work, lack of organisation or inability to concentrate. S7, a student with previous experience who was much more competent in the practical skills than many of the other students, resented group work: *‘I shouldn’t have to be teaching other students’*. S12, a student with Asperger’s, noted that tutorial discussions were challenging: *‘if they tell a joke, I’d just be completely clueless’*. Although problems with class attendance were experienced by some students as ‘so isolating’ (S18), others found the classroom context, with its noise and sense of being crowded, was daunting and *‘only attend out of obligation for my attendance record’* (S22). S2 did not feel comfortable studying at university, surrounded by unknown people. S9 felt isolated by a medical condition that required regular hospitalisation each week, making *‘interpersonal relationship … rather difficult’*. That isolation or lack of acceptance were anticipated can be seen in S3’s insistence: *‘I’ve been lucky in my group’* and *‘I’ve been really, really lucky’* [with my lecturers].

**Discussion**

It is clear from the students’ responses that access to learning and its resources should be considered a proxy for equity, giving them the opportunity to learn like other students ([Kent et al. 2018](http://informationr.net/ir/24-4/colis/colis1929.html#ken18)). They recognise the intent of the university policy to create a level playing field, but their responses indicate that they believe that the implementation of the policies does not go far enough or that the policies themselves can be a deterrent to access. This strongly expressed conceptual understanding probably arose from the fact that Accessibility Services contacted the students in the first instance, and it is possible that students thought their responses could affect the provision of services. Respondents took every opportunity to express the usefulness of the Accessibility Services team in supporting them as students, with very few exceptions. Within this context, the findings match those of studies conducted by Denhart ([2008](http://informationr.net/ir/24-4/colis/colis1929.html#den08)) and Bambara et al. ([2009](http://informationr.net/ir/24-4/colis/colis1929.html#bam09)).

Wilson’s categories of access ([2006](http://informationr.net/ir/24-4/colis/colis1929.html#wil06)) are useful in interpreting the way respondents to the study wrote and spoke about their experiences with their learning, with three categories, cognitive access, design access and content access, being particularly relevant. The findings show that the categories are useful in indicating where a gap may exist, but not how the gap affects an individual; applying the outcomes of the analysis to students with disability as though they are a homogenous group is a mistake. For the category of cognitive access, at one level, the responses of these students with disability are similar to responses one might expect from students without disability. They expect to be able to understand the learning resources, including the lectures, because they have chosen this field of study and mostly have had some level of success in the past. However, the difference they express is in the length of time it may take them to be able to read or listen to or watch and understand the materials. Thus, many of them would not agree that they have the same level of cognitive access as students without disability. Content access is a category where, for most students, the responses would be the same from all students. They are able to engage with the learning resources provided and use them to engage in discussion and for assessment tasks, as required. However, a small number of students struggle with being able to use the content. The practice-led approach to education demands the development of appropriate communication skills, including face-to-face and online discussions that some students with disability, especially those with mental health problems, find daunting, or it requires the production of particular formats of assignments in groups, such as animated presentations or podcasts where the technical skills involved may be unachievable. With design access, there are problems with the ways that the online learning tools and resources are developed and presented which affect all students. The lack of consistency in the use of the learning management system, the lack of expertise of academic staff in using the technologies, the problems arising from different versions of software are problems that affect all students. However, those with problems of vision or with difficulties in memory or concentration will find these more challenging and, in some cases, insurmountable problems. However, it would also seem that even ‘plugging these gaps’ would leave some students struggling to work successfully with the learning materials of their programmes of study.

In this study, it is clear that social capital as conceptualised by Bourdieu and by Putnam is possessed by students. They describe the support of friends and family in their studies, and the support of the accessibility services counsellor appointed to them, in ways that we might understand as the bonding capital described by Putnam. Yet, few of them have links into their study group and for most of them, the circumstances of their disability and its consequences make it almost impossible to create these links. In other words, they lack the bridging capital, the weak ties that often make it possible to progress (cf [Granovetter 1973](http://informationr.net/ir/24-4/colis/colis1929.html%22%20%5Cl%20%22gra73)). Social capital is key to understanding the experiences of students with disability in their engagement with learning resources online, including notions of empowerment and participation as Seale ([2013](http://informationr.net/ir/24-4/colis/colis1929.html#sea13)) proposed. Ragnedda ([2018](http://informationr.net/ir/24-4/colis/colis1929.html#rag18)) and Ragnedda and Ruiu ([2017](http://informationr.net/ir/24-4/colis/colis1929.html#rag17a)) similarly argue from a Bourdieusian perspective for the importance of social capital in creating benefits from online engagements. This study shows clearly that students believe they have to work longer and harder to be successful, one of the benefits of engagement with learning resources. Many of them do not feel empowered, because they cannot rely on their online learning resources being available at a time convenient to them, so they are unable maximise their opportunities to be successful. Even if the learning resources are available, their presentation in the learning management system may make them difficult to use. For many students, the process of making the application for the accommodations they need for their studies, before they even get to using learning resources, undermines their self-esteem, leaving them feeling disempowered. The fear of stigmatisation or rejection is such that a significant number of students with disability do not always seek the accommodations that would give them support in their learning. Those who do apply, do not always find they are granted the level and type of accommodation that meets their needs, and thus, a student with disability confronts another layer of inequality. Students who clearly cannot participate fully in the collective, social aspects of face-to-face learning not only lose the opportunity to gain access to the resources used in that interaction, they lose the opportunity to develop social capital and thus experience further disadvantage.

**Conclusion**

This study has shown that the concept of access is complex, especially in the context of students with disability. Institutionally, such a concept must be concerned with policies and strategies that will remove barriers that might lead to inequality, and in so doing it must be flexible enough to recognise the impact of different disabilities and that many students have more than one disability. This institutionally focussed concept of access must also recognise the significance of the staff, especially academic staff, in the implementation of the policies and strategies and ensure that they are trained to take an active and supportive role. With the increase in the use of online learning resources, some of these strategies will have the potential to benefit all students. To this end, Wilson’s categorisation of access provides a useful basis for the development of institutional policies and strategies, but it cannot provide any contextually based solutions for solving the gaps it identifies.

The study has also shown how an approach based on a Bourdieusian approach to social capital puts the individual at the centre and has particular potential for use with students with disability and other groups who may find themselves marginalised within society. Barriers to access can be understood in broader societal terms, going further than problems with the physical or intellectual access to learning resources, to highlight how existing inequities are reinforced through lack of social capital. Social capital, a resource of an individual, can be seen to influence not just a single set of interactions, with low social capital iteratively affecting relationships across all the experiences of the student with disability, reinforcing the extraordinary challenges involved in being a successful student. Further, students are seen deliberately acting in a way that could appear not to be in their best interests, that is, not declaring their disability, in order to have the potential to develop their social capital. This study has also shown how Putnam’s concept of social capital, especially bridging social capital, can shed light on the social aspects of the concept of access.

The study makes significant contributions, both practically and conceptually. On a practical level, the findings of this study have shown how the decisions and actions of teaching staff in a university can have far-reaching consequences for students. These are mostly not significant decisions, but are merely part of the day to day routine of semester activities for teaching staff who largely work at arm’s length from those teaching other subjects.

On a conceptual level, a significant contribution has been made to the literature on the concept of access. This study has reinforced Dervin’s contention ([1973](http://informationr.net/ir/24-4/colis/colis1929.html#der73)) that institutional access is fundamental; before an individual or group can gain access to information, the infrastructural support (in terms of legislation and policies) must exist and be effective. However, its major contribution has been its concern with the social aspects of access. This study has demonstrated that university students with disability include the social perspective in expressions of their own experiences of access to learning resources, alongside aspects of physical access, to which they give less emphasis. The social perspective presented by these students is one that places them both inside and outside of social interactions, an approach which merits further exploration.

**Acknowledgements**

We acknowledge support from the University of Technology Sydney Disability Project Fund. The expertise of staff in the Student Services unit of the university was an invaluable resource and we appreciated their assistance in managing the process of recruiting students.

**About the author**

**Hilary Yerbury** holds an honorary appointment in the Faculty of Arts and Social Sciences at the University of Technology Sydney. Her current research interests build on a long standing concern for the development of active citizens, with access to the information they need for everyday life. She can be contacted at Hilary.Yerbury@uts.edu.au
**Simon Darcy** is a Professor at the UTS Business School, University of Technology Sydney. He has been a member of the Disability Council of NSW, which advised the New South Wales Government's Department of Family and Community Services and is currently working on a number of projects relating to the Australian National Disability Strategy and disability citizenship. He can be contacted at Simon.Darcy@uts.edu.au
Dr **Nina Burridge** is an Associate Professor in the Faculty of Arts and Social Sciences at the University of Technology Sydney. Her involvement in community organisations and social action groups informs her professional work in Education. Her main research interests centre on Indigenous education and education for human rights and cultural diversity, social justice and women’s empowerment. She can be contacted at Nina.Burridge@uts.edu.au

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**How to cite this paper**

Yerbury, H., Darcy, S. and Burridg, N. (2019). Accessing learning resources: experiences of students with disability. In *Proceedings of the Tenth International Conference on Conceptions of Library and Information Science, Ljubljana, Slovenia, June 16-19, 2019.* *Information Research, 24*(4), paper colis 1929. Retrieved from http://InformationR.net/ir/24-4/colis/colis1929.html (Archived by the Internet Archive at https://web.archive.org/web/20191217175541/http://informationr.net/ir/24-4/colis/colis1929.html)