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Literacy strategies used by adults with intellectual disability in negotiating their everyday community environments

Michelle F. Morgan
Karen B. Moni
Monica Cuskelly
The University of Queensland

This paper presents the findings from one part of a participatory research investigation about the literacy strategies used by three young adults with intellectual disability in their everyday community environments. Using data collected through video recording, prompting and think-alouds, information was collected about the range of literacy events that the research partners engaged with and the strategies that they used to negotiate these events. Findings revealed that these young adults engage in literacy in their everyday lives using literacy strategies that are multiple and varied and which draw on learned school-based and context specific strategies. Visual texts enabled more effective construction of meaning. Multiple context specific examples are provided to create a snapshot of how these young adults use literacy in their everyday community environments that broadens our knowledge

and understanding of the types of literacy events and strategies that they engage with.

Keywords: *literacy, intellectual disability, community, strategies.*

Introduction

Being literate is key to being a valued and contributing member in a Western society (Katims, 2000; Lundberg & Reichenberg, 2013; Street, 2011). The definition of literacy however, is contentious with questions of who may be literate and calls to broaden conceptualisations of what constitutes literacy and for whom (Keefe & Copeland, 2011; Kliewer, Biklen & Kasa-Hendrickson, 2006; Morgan, Cuskelly & Moni, 2011). Social theories of literacy have legitimated the socially embedded, context specific nature of literacies (e.g., Gee, 1991; Street, 1997), and findings from a range of ethnographic studies in different contexts have broadened conceptualisations about what constitutes literacy to include multiple forms (e.g. Chitraker, 2000; Maddox, 2005; Papen, 2004).

Yet despite literacy being recognised as a social practice (Street, 2003), these views have failed to make substantial inroads into the ways literacy is perceived and investigated with individuals with intellectual disability. School-based conceptualisations continue to dominate pedagogical practices of literacy learning, with value placed on school-based literacy skill acquisition, which leads to everyday literacy practices being marginalised (Katims, 2000; Maddox, 2008; Papen, 2005; Street, 2011) and overlooked in investigations with adults with intellectual disabilities.

Conceptualisations of everyday literacies emanated from Street's (2003) model of literacy in which literacy is socially embedded and learning particular literacies is dependent upon the specific contexts in which they are learned. In this model, everyday literacy constitutes multiple practices that people use as they go about their day-to-day lives in the community, for example reading timetables, writing

and sending Christmas cards, navigating information boards, and following directions.

Research into understanding what constitutes literacy from a social perspective enables researchers to move away from more traditional, psychometric studies of literacy acquisition to adopt a situated view of the social practices of literacy in different contexts, and the meanings that literacy has in the lives of those who use it (e.g. Papen, 2005; Smith, 2005; Taylor, 2006). From this perspective, qualitative investigations of literacy, in which participants have the opportunity to tell their own stories, in their own ways, within familiar contexts, are undertaken. However, there are limited studies of the situated literacies of adults with intellectual disability and how these intersect with those strategies taught and used in school (e.g. Smith, 2005; Taylor, 2006; Wilson & Hunter, 2010). These studies have found variance between school-based and everyday literacy strategies and have identified difficulties in transference of literacy use across different literacy domains for typically developing adolescents and at-risk learners (e.g. Alvermann, 2001; Smith, 2005). However, there is limited information about whether and how adults with intellectual disabilities use specific literacy strategies to enable the negotiation of literacy in everyday community environments. Thus, little is known about the ways adults with intellectual disability use literacy in social, local contexts, which is where literacy is most likely to be used by them.

Investigating how people with intellectual disability construct literacy in different contexts will add to our understanding of the role of literacy in the lives of these individuals together with enablers of, and barriers to, the accessibility of literacy and thus how to more effectively enhance their access and participation in a range of social and community spaces and events.

This paper reports part of a PhD investigation of the everyday literacy use of individuals with intellectual disability using a participatory approach to research. The key questions guiding the research were:

- What does literacy look like for young adults with intellectual disability in their everyday environments?

- What literacy strategies do they draw on in negotiating these environments ?

Method

This project used a participatory research design (see e.g. McClimens, 2004; Walmsley, 2004) in which the young adults were research partners rather than objects of study. This design involves a collaboration in which individuals with intellectual disability are included in the research process so that the research is undertaken *with* and not *on* them (Walmsley, 2004). This design was considered an appropriate methodology through which to explore the research partners' literacy use as they negotiated their everyday environments. While the direct experiences, views, thoughts and, in this case, literate processes, of the research partners are integral to the research partnership, participatory research allows for collaboration with a person without intellectual disability to provide direction (Alm, 2010; Bigby & Frawley, 2010), and in this case, skill development. As collaborative research partners it was essential to develop their knowledge and skills in research, prior to data collection. This occurred via a collaboratively developed research training program that was accomplished through the application of action research cycles.

Action research is a form of inquiry that acknowledges the realities of the dynamic nature of teaching and learning, while providing a scaffold from which knowledge and understanding may be developed to effect change (Hien, 2009). It enables the implementation of strategies or actions, as well as amendments, based upon observation and critical reflection of those actions, through the progression of a series of successive, recurring cycles (Smith, Bratini, Chambers, Jensen, & Romero, 2010).

Research partners (Participants)

The research partners were three young adults with intellectual disability - Emma, Joseph and Lauren. Emma and Lauren chose to use their real names, while Joseph chose a pseudonym. Emma and Joseph have Down syndrome. Lauren has an intellectual disability for

which the cause is unknown. Through the use of levelling procedures (see Morgan & Moni, 2008) the research partners' approximate reading ages ranged from eight to ten years. These young adults had left school 10, 12 and 4 years ago, respectively. All of the research partners lived at home with their parents where they all enjoyed listening to music, watching DVDs, cooking, and surfing the internet. During the course of the project, all of the partners were active, social members of their communities participating in organised sporting activities such as horse eventing (Joseph), gymnastics (Emma and Lauren), tennis (Emma), and community classes including art (Emma), scrapbooking (Lauren) and dance (Emma, Joseph and Lauren). Emma, Joseph and Lauren attended a post-school program two days per week comprising literacy, technology, art, and community activities. Emma and Joseph undertook paid employment, while Lauren was employed in a voluntary capacity.

Procedure

As this project used participatory research it was essential to develop the research partners' knowledge and skills in research, prior to data collection. To this end, three action research cycles were undertaken with each cycle comprising two parts. The first constituted teaching and learning about research and what the term *literacy* encompassed. The second part transitioned into the field to collaboratively investigate the research partners' use of literacy in their everyday lives, the effectiveness of the strategies they used and any barriers they experienced in negotiating literacy.

Emma began in Cycle 1 and was the first research partner. The principal researcher (Michelle) worked with her to develop her understanding and skills related to research. Together they collected data relevant to Emma's everyday literacy. Emma's role changed to teacher in Cycle 2, when Joseph joined the project. Emma, supported by Michelle, passed on her research knowledge and skills to Joseph and then the three researchers collected data about Joseph's everyday literacy. When Lauren joined the project (Cycle 3), Emma took on the role of research director and Joseph that of teacher. In the final cycle, the three research partners collected data pertaining to Lauren.

A transition to the field followed the teaching and learning phases of the project. During this phase, the partners trialled modelled data collection methods in a familiar environment before going into the field. This enabled the partners to gain confidence in collecting data and allowed for problem solving prior to entering the field. During these trials it was determined that the most effective approach for collecting data was participant observation where the literacy events were videoed while the literacy user adopted a think-aloud protocol to talk about what s/he was doing and thinking (Wong, 1997). Question and think-aloud prompt cards were collaboratively developed. They comprised prompts such as "tell me what you are looking at. What can you see?" "What are you doing?" "How are you doing it?" "What did you do first?" These assisted the partners to talk about what they were doing, how they were using literacy and to tell their literacy stories.

Data collection

Prior to entering the field to collect data about their literacy in community environments, the partners selected a range of field sites they frequented. These included a local lookout with a café, planetarium, botanical gardens, a retail venue and a library. Emma and Joseph were also observed extracting information from a bus timetable, and Emma withdrew cash from a money kiosk. Each literacy event was filmed and think-alouds and prompt cards were used to support the collection of data at each site.

Table 1 shows the data sources in terms of the literacy events associated with each site. From this Table it can be seen that the partners engaged in a diverse range of literacy events including, for example, viewing displays and pictures; reading a diversity of environmental print and information via a range of mediums; navigating directories, on-screen instructions, and store layouts; ordering and purchasing, and using a computer catalogue. Each partner engaged in multiple events, at different times and contexts, which drew on the five literacy elements of viewing, reading, writing (including creating), listening and speaking (ACARA, n.d.). Table 1 also shows diversity in the complexity of events in which the partners engaged in their everyday lives. These included viewing through a

telescope and viewing displays to reading and using environmental print and transport timetables.

Table 1: Field sites and corresponding literacy events

Local lookout (All)	**Cafés (All)**	**Planetarium (All)**	**Botanical gardens (All)**
Viewing through a telescope	Reading a menu billboard	Viewing photos, models, displays	Navigating using sign posts, markers
Reading tourist information boards	Reading an à la carte menu	Reading information plaques	Reading plant labels, information plaques
	Ordering, purchasing		Reading information boards

Retail stores (All)	**Library (All)**	**Bus transit terminal (Emma & Joseph)**	**Money kiosk (Emma)**
Viewing items	Navigating sections	Reading timetables	Reading on-screen instructions
Reading, using signs and environmental print	Locating specific books	Reading digital time displays	Navigating screens
Locating specific items	Using a computerized catalogue (Joseph)	Viewing and reading numbers, destinations on buses	Following instructions
Ordering, purchasing	Reading signs		Making selections
Navigating shopping centres using directories, information boards and signage	Reading titles		Inputting monetary amount figures
	Viewing pictures and displays		
	Using an automated scanner to borrow books		

Data analysis

Each week, the collected data were collaboratively analysed using the video footage of each literacy event together with the Combined Literacy Scaffold (White & Morgan, 2012) that was based around the research questions and developed by Michelle and Emma. For example, the research team used this scaffold to identify themes. Similar responses became themes that were identified and refined further. The themes were then clarified to ensure accuracy of representation. Explicit instruction, modelling, support and repeated practice were provided so that, by the third cycle, the partners were able to use this scaffold and process to independently analyse the field data.

A range of measures was used in this project to ensure reliability, validity, and thus rigour in the research process. The issue of accurate representation of data was addressed through collaboration and shared research roles, through videoing all research sessions to enable repeated checking, transcribing data, and member checking. Ensuring accurate representation of data through the use of multiple methods enhanced the validity of the investigation, while varying the times and settings of observations and using a variety of data collection methods to facilitate triangulation, enhanced reliability of research findings (Lewis, 2009).

Results

Literacy Elements

Of the five literacy elements, viewing and reading were used most by all of the partners, while writing was used least, and not at all by Lauren. All of the partners used viewing and reading in all of the sites visited, and in all of the literacy events, with the exception of ordering items and food which was done from memory where speaking and listening were used. Writing was used by Emma when withdrawing cash from a money kiosk. The on-screen instructions required her to type in a PIN number and amounts of money. Joseph used writing in the library when he used the computer catalogue to locate a sports' book. All of the partners had the opportunity to write in a visitor's

book at the botanical gardens, but all declined to do so. Apart from the writing events indicated above, opportunities for the partners to engage in writing in these local contexts were rare, and this might account for writing being the least used element.

The range of strategies used by the partners when negotiating literacy events in their everyday community environments is presented in the next section.

Strategies used for constructing meaning from everyday environments

These young adults engaged in multiple and varied literacy events with a diverse range of complexity. The analysis identified a range of strategies that the partners used in negotiating literacy in their everyday community environments. These are presented in the order in which the young adults used them to construct meaning.

Viewing pictures and reading main headings

When pictures or icons were present, all of the partners looked at the picture first before reading any written text. Then, typically, they looked at any headings or signage if these were available. The think-aloud excerpt in a music store highlights Emma's use of this strategy:

> Emma: Um, when I see all the CDs I always um, look at, I actually um look at the pictures (Emma looks at the CDs while she is talking)…
>
> Emma: (Points to the large label "ROCK & POP above the CDs) And I do actually read the signs, they tell me these CDs are Rock and Pop.
>
> Cycle 1 8-08-09

In the second cycle, during a visit to a café, Joseph explained how he used the pictures on the menu to help him read and know what to order.

> Michelle: Okay Joseph, you're looking at a menu – so tell us what you're doing.

Joseph: I looking at the pictures first

Michelle: Okay, so you looked at the pictures first. What do the pictures help you with?

Joseph: I think the pictures, when I see the pictures I see the writing.

Cycle 2 17-04-10

When selecting a CD in a music store, Lauren also looked first at the pictures on the cover before reading the words.

Emma: Tell me what you're doing. Are you looking at the pictures or the words?

Lauren: On this CD, I am looking at the pictures of the people on the cover and then I look at the words on it and then I also I look at the words at the back, of the songs, the words of the songs.

Cycle 3 16-12-10

However, reading main headings in conjunction with viewing pictures did not always enable the partners to construct meaning, and in these situations the partners used prior knowledge to make links between the information being presented and what they already knew and understood.

Making links to prior knowledge

The partners used prior knowledge in situations when pictures were unfamiliar, or absent, and when they experienced difficulty in reading and understanding written text. For example, Emma used her prior knowledge about plants to determine what a bonsai was.

Michelle: Okay, we've got a sign on the wall. And what does that say Emma?

Emma: I think it's Bols… Bonsols House

Michelle explains that the word is Bonsai

Emma: Well actually, I do know what it means. It's actually a fake plant…

Some discussion follows of Emma's strategies for using pictures and headings from an information board about bonsais.

Michelle: Have they [pictures and headings] helped to tell you what a bonsai is?

Emma: Um yes

Michelle: So what do you think it is, based on the pictures and the headings?

Emma: It's actually a um… a cactus.

Michelle: Oh OK, so what is a cactus? What do you think a cactus is?

Emma: Well a cactus is not a real plant …um…

Michelle: OK so you're still thinking that a bonsai is a fake plant?

Emma: Yes

Cycle 1 25-07-09

This transcript shows that Emma's use of linking to prior knowledge in this context was an ineffective strategy in this context to assist her to construct meaning from the written material on display. This may be attributed to her limited knowledge about cacti, together with difficulty in reading the information board.

Joseph accessed and activated his prior knowledge in the planetarium, attempting to make links between what he already knew about planets and the information that he was trying to extract from the displays.

Joseph (Looking at a photo of Venus and its moon): I looking at the two planets here, and about Venus, and the writing here, and I read it, I read the writing about Venus.

Michelle: And what does it tell you about Venus?

Joseph: Ah, (Joseph begins reading from the end of the first line) clouds of sel-fabric and also an-ter-mos-phere of carbon dis-oxide and greenhouse reflect [sic: *Clouds of Sulphuric acid and a dense atmosphere of carbon dioxide produce a greenhouse effect*]…

Michelle: Do you know what a lot of those words are? What they mean?

Joseph: Um yes

Michelle: (Points to *Sulphuric acid*) This one, what does this mean?

Joseph: Sulf-afric

Michelle: What is that?

Joseph: It's like, it's a sort of fabric. It's like when you look at the two pictures it's like the fabric of the two planets…

Joseph's inability to accurately recognise and read the difficult vocabulary led to inaccurate word substitution. Links to prior knowledge were, therefore, also inaccurate and, in this instance, linking to prior knowledge was an ineffective strategy.

While the partners attempted to make links between the information being presented and what they already knew, when written text was too difficult to read and understand, construction of meaning was limited because of incomplete knowledge, and inaccurate word substitution, and so use of this strategy was ineffective.

Reading signs

There were myriad signs in the settings the partners chose. For example, in shopping centres, the partners were aware of signage and often made use of it to locate specific departments, and items.

Emma explained the signage in her place of employment, a large clothing store.

Emma: There's boys wear, babies wear, men's wear… (Emma ticks these off on her fingers)

Michelle: And how do you know which department is which?

Emma: Well, they all have signs up (Emma points to the large signs suspended from the ceiling in different areas)

Cycle 1 8-08-09

While this indicated accessibility of this signage, other sites revealed that some signs were inaccessible to the partners because of the choice of font and style being used. For example:

Michelle: What do you do when you come to a bookstore Emma?

Emma: I look for all the signs to tell me what books I can buy

Inside the store, Emma looks at a sign that reads – RECOMMENDED STORIES – the font is ornate and each letter abuts the next without spacing:

Emma: Oh, I can't understand that (points to the sign) I'm looking at this

Michelle: This one here? So you've looked at it but you haven't understood it so what do you do?

Emma: Um, I won't read it

Cycle 1 8-08-09

Joseph also made use of signage in a bookshop to help him to locate specific collections and genres.

Michelle: What sort of books are these?

Joseph; Um, they are non-fiction (looks at the sign above the section)

Michelle: And how do you know that?

Joseph: I think non-fiction means biographies (this sign is visible above the shelf)

Michelle: Okay, and was there some sign that told you that it was a non-fiction section?

Joseph: Um, up here

Cycle 2 1-05-10

Although Joseph used signs to locate specific genres, he experienced difficulty when he did not understand terms such as 'Paranormal Fiction' and 'Reference'. Joseph read some titles of the books in the section to determine what 'Paranormal' meant. He looked at the pictures and then used his prior knowledge of the horror genre to link to the unfamiliar word:

Joseph: Paranormal fiction

Michelle: Oh, what does that mean?

Joseph: I don't know

Michelle: How would you find out what Paranormal fiction meant? What would you do?

Joseph: I think, I don't know… I think it's like um (Joseph looks at books in this section which were displayed with the covers facing out) I think it's horror

Michelle: And what makes you think that?

Joseph: Because of the titles here

Michelle: What sort of titles are you looking at here?

Joseph: There's vampires and scary ones (Joseph was looking at the pictures of ghouls on the covers)

However, Joseph did not always use this strategy effectively if there were no picture clues associated with the signs as indicated in the continuing transcript.

(Joseph walks past another sign)

Joseph: Reference

Michelle: What's reference? What sorts of books are in the reference section? (Most of the books in this section were placed

on the shelves with only the spines facing out. Those that had the covers facing out were without pictures).

Joseph: I don't know (Joseph continues to walk on)

Michelle: So would you bother finding out? Or would you just read it and not worry?

Joseph: I just not worry…

Cycle 2 1-05-10

The absence of signs, and in some situations the partners' difficulty in using the signage, led to the identification of another strategy that the partners' used when locating items categorised by the researcher as random perusal.

Random Perusal

All three partners adopted the strategy of wandering through sites, choosing items at random to inspect to see if they met their needs. This strategy of random perusal was most evident in the library, although it was also observed in other locations such as the botanical gardens, the planetarium and various shops. Both Emma and Joseph had some explicit knowledge about how to use the search tools available in the library, but chose not to employ them. For example

Michelle: So what book are you looking for at the moment?

Emma: Um, travelling books

Michelle: Travelling books, so how do you know where to go to get a travelling book?

Emma: If I go through, well I look through the catalogue to show me where it is

Michelle: …So would you like to look through the catalogue, or would you like to keep doing what you're doing?

Emma: I'll just keep going

Emma resumes wandering past aisles and up and down them. She looks around, then at random, slides books halfway off the shelf, looks at the cover and then slides them back and moves on.

Scrolling and reading random words

Reading random words was observed in conjunction with scrolling when constructing meaning from specific texts such as menus, display plaques, information boards and timetables. For example, in a site visit to a café, Emma selected one of the menu boards at random, then used her finger to scroll down the listed menu until she came upon an item that she recognised. She then read the main heading that was typed in bold font. If it was something she recognised or wanted, she read the sub-headings or information about the item.

Scrolling is an overt indicator of directionality in reading and a strategy that was used by all of the partners to locate familiar vocabulary when attempting to read various literacy artefacts at different sites. While Emma and Joseph used scrolling effectively when reading bus timetables displayed in a transit terminal, in other contexts, the partners used the strategy of directionality haphazardly. This resulted in the partners reading isolated words from random places within the text and affected their ability to gain understanding of the text as a whole. Joseph, for example, after reading main headings, would 'pick out' key words at random from the texts. He did not use conventional directionality of top to bottom, left to right, but started at random places within the text and then read isolated words. For example, in the planetarium, after reading the heading, Joseph began reading the eighth word of the first line followed by the fifth word of the next line (bold in the transcript).

The first paragraph of the text reads:

> *SATURN'S RINGS*
>
> *Saturn and its magnificent ring system change* ***orientation*** *as seen from NASAs Earth-orbiting H****ubble Space Telescope*** *during part of Saturn's 295-year journey around the Sun.*

Joseph points to the second line of text as he reads. He attempts to read the word orientation but then reads from the next line

Joseph: Hubble space telescope

Cycle 2 17-04-10

Readability statistics, calculated using the Flesch Reading Ease and the Flesch-Kincaid Grade Level (Kincaid, Fishburne, Rogers & Chissom, 1975) were applied to the passage above. These statistics generate an approximate readability, together with a school grade level of readability for the text concerned. The level of readability for this passage equated to a Flesch Kincaid Grade level of Grade 12. This was clearly well above the partners' approximate reading ages of Grade 3 to 5.

At the tourist information boards at the lookout, Lauren looked at the information in random order. She did not use top to bottom, left to right directionality, instead she looked randomly at various sections of information and then selected one to read. In the planetarium, Lauren was observed scrolling through one of the information plaques. She ran her finger underneath some lines of text in a general sweeping top to bottom, left to right direction, but beginning from the third line down. Like Joseph, Lauren also read some words at random from within the text.

Left to right, top to bottom and line-by-line directionality is the established reading strategy that is taught in schools in the western world. However, the analysis of observations indicated that for the partners, when text was at a level of difficulty above their comfortable reading level, conventional directionality was used haphazardly, or replaced with reading words at random. This was shown to adversely affect their ability to construct accurate meaning.

Phonological decoding

While phonological decoding skills were used by all of the partners, their use of this strategy was not often effective. For example, Lauren was observed using phonological decoding at the lookout information boards and also at the planetarium.

Emma: Do you want to read out something to us?

Lauren: Oh um, Australia's fist, first, Australia's first

She pauses for six seconds looking at the next word then attempts to decode the unknown word phonologically:

Lauren: Australia's first, oh, Australia's first you-ro-ah-na-no, blah

Lauren hangs her tongue out and looks at Joseph and shakes her head

Lauren: Blah, de-lah, (she skips this unknown word) transverse-re-or-err, blah I dunno what the word says. Trans something, I dunno, I can't understand what the word says

Cycle 3 12-12-10

While the partners displayed their knowledge of phonics and the mechanics of phonological decoding through the use of sound chunking (grouping chunks of sounds rather than sounding single letters), they were unable to make use of it to effectively blend and decode words. In other contexts, discrepancies between knowledge and skills affected their literacy practice.

Knowledge versus practice

There were instances during literacy events where the partners' knowledge of literacy behaviours was discussed but not observed in practice. For example, Emma was not observed using any form of alphabetical ordering or cataloguing system to locate a travel book in the library even though she knew the purpose of catalogues and numbers found on library books.

Michelle: I notice that you're looking down each aisle, what are you actually looking at?

Emma: I'm actually looking at all the numbers

Michelle: And what do the numbers tell you? What do they mean to you?

> Emma: Um, …um, no the numbers tell me what the number of the book code

Cycle 1 8-08-09

Joseph also knew that libraries used alphabetising to order books. However, he was unaware of the structure of the library and the use of alphabetising in specific sections, and could not use this knowledge effectively in practice. Similarly, Lauren talked about how at the planetarium she always read the information under each display so that she knew what the image was about.

> Lauren: When I come here by myself I would probably look at this (points to the large image of planets) and read (points to the information plaque) what this is saying all about (sweeps her hands over the images) and what it's telling me, what these pictures are all about and what it's saying about the planets and stuff like that, yeah.

Cycle 3 14-12-10

Yet in practice, Lauren was not once observed reading any of the information plaques or scrutinising any of the images or displays beyond a glance. It was also found that while Joseph said he looked at and read the writing first, in practice he was observed looking at, and talking about the pictures before reading any text.

These examples of differences between what the partners knew and what they were able to do might emanate from learning traditional school-based literacy practices where reading text is seen as more important than looking at pictures. Their accounts might also indicate a desire for the partners to say what they thought Michelle wanted to hear, and what they knew to be valued as mature reading behaviours.

In these contexts the partners displayed partial knowledge and understanding of those behaviours typically found in proficient readers such as using conventions of print but were not always able to practise them.

Discussion

The aim of this investigation was to identify the kinds of literacy events that young adults with intellectual disability engaged in during community activities, and the strategies they used to negotiate these events. This investigation provided a snapshot of the literacy use of three young adults with intellectual disability, revealing that they engaged with a range of literacy practices in a variety of community settings. They used a range of strategies and context specific tools to assist them in locating items and in the construction of meaning.

One of the key findings is that these three young adults with intellectual disability relied on the use of picture clues. In all literacy events, viewing pictures was the first strategy that they used to construct meaning. In contexts where written information was inaccessible to the partners, pictures were their sole source of information. Consequently, in the absence of written text, or when the partners experienced difficulty accessing it, they attempted to make links to their prior knowledge for the construction of meaning from visual text. However, this was not always accomplished successfully and thus their construction of meaning was not always accurate.

The analysis indicated that all of the partners used main headings and signs as a source of information and when available, matched these to the images. However, there was mixed success in the partners' use and construction of meaning from main headings. For example, in the botanical gardens none of the partners was able to make sense of the information provided on the information boards in the bonsai house. The partners were aware of, and used signage to follow directions, locate items, and determine the various sections of different settings. When environmental print was inaccessible, or the partners lacked strategies to make use of it effectively, they used random perusal. The literacy strategies used by all of the partners in their local libraries for example, highlight their use of random perusal to locate specific books. These findings also indicated a partial understanding of some of the library tools such as call numbers on books and the system of alphabetising, but limited abilities in using this knowledge as a strategy to find books.

Reading isolated words was used when the partners experienced difficulty accessing the signage and understanding the layout and organisation of other contexts. Here, limitations in knowledge and reading skill, an incomplete understanding of the conventions of print and reading behaviour such as directionality and difficulties in applying written content to real life situations hindered comprehension

This investigation showed that the partners knew and used some school-based strategies in their everyday contexts, for example matching pictures to written text, reading main headings, making links to prior knowledge, and scrolling text from top to bottom and left to right. However, their use of these strategies was inconsistent and not always effective. Their use of directionality and scrolling on texts such as menus and bus timetables was more successful. However, it was also found that when a word was unfamiliar and difficult to read it was ignored, omitted, phonological decoding was attempted or a substitution was made.

In all instances where the partners decoded by sound chunking (grouping chunks of sounds rather than single letters) they had knowledge of the letter sounds but they were unable to connect the sound chunks to decode the words correctly. Thus, either substitutions were made, or the word was omitted from their reading. When the text was too difficult and phonological decoding was unsuccessful, the partners would stop reading and give up altogether. These findings identify limitations in the ability of these young adults to transfer school-based learning to everyday local contexts and support other research findings.

The issues raised in this study highlight the need for a social practices approach to literacy learning to enable these young people to be taught about their local communities and environments. School and post-school curriculums need to address topics that are of interest and relevance to their learners with intellectual disability in a way that is meaningful to them in their community life.

The implications of these findings are for educational programs and community programs to provide multiple and varied hands-on

opportunities in ways that cater specifically for learners with intellectual disability to accommodate the different knowledge and skills they have about literacy strategies (Alfassi et al., 2009; Snell, Luckasson et al., 2009).

Conclusion

The findings from this investigation have broadened our understanding about the literacy use of people with intellectual disability, and what constitutes literacy for them in their everyday environments. The study has provided evidence for the central role that literacy plays in the lives of these young adults revealing that literacy for these young adults is complex, multi-modal and challenging. Furthermore, important insights have been uncovered about the strategies that young adults possess and that they need to develop as they negotiate community environments independently. This investigation highlights the need for researchers to continue exploring the literate lives of people with intellectual disability so that conceptualisations of what constitutes literacy for this group are broadened, local everyday literacies are recognised as legitimate, and people with intellectual disability are valued as literate members of society.

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About the Authors

Michelle F. Morgan *has a Master of Philosophy in Education and is currently completing her PhD from The University of Queensland. Michelle has 17 years experience in the field of Education, including early childhood, primary and special education. Her interests are in literacy and intellectual disability.*

Karen Moni *is an Associate Professor in the School of Education, The University of Queensland. Her research interests include literacy and young adults with intellectual disabilities, literacy and literature for adolescents, and teaching, learning and assessment in higher education. She is currently the President of the Australian Association for the Teaching of English*

Monica Cuskelly *is Associate Professor in the School of Education, The University of Queensland. Her research interests include the development of individuals with Down syndrome across the lifespan, self-regulation in individuals with an intellectual disability and family responses to having a member with a disability.*

Contact details

Michelle Morgan

The School of Education
The University of Queensland
St Lucia 4072
Queensland

michelle.morgan@uqconnect.edu.au

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