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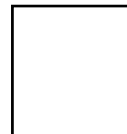

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Reference Services Review

The Information Literacy and Continuous Professional Development Practices of Teachers at a Jewish Day School

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Introduction

This study explores how in-service teachers perceive, practice and develop Information Literacy (IL). The importance of IL is well established (Batchelor, 2017; Owusu-Ansah, 2005). No longer a concept promoted by library and information professionals alone, political institutions and governments have come to view it as supporting the "fundamental pillars of good governance" (UNESCO, 2011 p. 26), as "essential to the functioning of our modern democratic society" (Obama, 2009) and as "a prerequisite for participating effectively in the Information Society, and … part of the basic human right of lifelong learning" (UNESCO, 2003). With the emergence of the "Post-fact Era", IL has grown more important than ever (Watstein and Mitchell, 2017 p. 2). However, emphasis in IL research has been mainly placed on students, overshadowing the other variable in this equation: teachers. The influence of teachers on students is not limited to direct instruction. In many cases, students spend more time with their teachers than their parents (Qureshi and Niazi, 2012) and learn as much from modelling behaviour as from taught lessons (Bandura, 1971). Insight into teachers' IL is therefore of great importance.

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This realisation has sparked some emerging interest in teachers within the IL domain (Reynolds *et al.*, 2017). However, this tends to concentrate on how teachers conceptualise their students' IL (Togia *et al.*, 2015; Williams and Wavell, 2007), how teachers' IL competencies transfer to students (Ballard, 2013; Stockham and Collins, 2012) or how to best teach IL to pre-service teachers so they can integrate these skills into their classrooms (Crouse and Kasbohm, 2004; Earp, 2009; Whitver, 2017). Little is known about how teachers perceive, engage in and pursue IL in their own personal

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practice (Williams and Coles, 2007) and via their continuous professional development (CPD) activities.

A recent shift in IL scholarship poses an avenue for exploring the development of IL as a lifelong learning and continuous professional development process, conceptualising and positioning it as a sociocultural practice shaped by professional and social contexts, rather than as a set of discrete library-oriented skills (Abdi and Bruce, 2015; Lloyd, 2017; Lundh *et al.*, 2013; Martzoukou and Abdi, 2017; Williams *et al.*, 2014). The sociocultural approach appreciates IL as a socially constructed practice which manifests differently upon context, rather than as an individual's competency or as a tool for solving information problems. The nature of all human phenomena, including information literacy, is social, and understanding these phenomena requires attention to be paid towards the situated activities of "people-in-practice" (Lloyd, 2010b p. 24; Lloyd, 2012; Moring and Lloyd, 2013).

The context to which the sociocultural approach to IL has predominately refocused attention is the workplace. Returning to Zurkowski's (1974) conceptualisation of IL as a workplace phenomenon, IL is perceived as an "attribute of employability" (Inskip, 2014) and the workplace is seens as a complex and collaborative "information landscape", (Lloyd, 2010a) where great emphasis is placed upon social and embodied learning (Marcum, 2002; Sundin, 2008) as useful in the performance of work and as pivotal in generating professional identity within workplaces (Moring, 2011). In this way, becoming information literate is a "cultural and transformative process" through which

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professionals transition "from learning to act in the setting to learning to be the setting" (Lloyd and Somerville, 2006 p. 188), integrating themselves within their workplace cultures (Whitworth *et al*., 2015).

Thus conceived, IL cannot be evaluated according to a universal standard; there are no set skills or activities whose performance could be measured across contexts. Instead, the degree to which a person is information literate is determined according to "discursively produced agreements" about information within specific contexts (Lloyd, 2012 p. 781). More recent views even transgress this context specific view to emphasise the converging character of different contexts (e.g. work, everyday life, education) in which people experience, share and act upon information. From this perspective, IL is perceived not as a contextual skill, but as "knowledge construction, knowledge deconstruction and knowledge extension…within converging contexts that are influential upon each other" (Martzoukou and Abdi, 2017 p. 657). Put in this way, IL is not a state that can be accomplished as it is an ongoing lifelong learning experience of knowledge construction and deconstruction throughout a person's life and across contexts and time. The implication of this approach for IL education is that it is impossible to teach IL as context-unrelated skills, or even more profoundly to teach them in relation to one specific context. This problem is embodied in a skills based IL models which prepare students for IL skills related to the academic environment, but do not encompass the totality of contexts they have been, are and will be embedded in as professionals (Hoyer, 2011).

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Literature Review

Teachers' IL as a sociocultural practice

True to the predominate trend within the IL literature, research into teachers' IL overwhelmingly takes a skills approach. Consequently, it overlooks the context of the school as a workplace and there is a paucity of research into teachers' IL as a sociocultural practice. Symptomatic of this approach, the literature is primarily concerned with pre-service teachers' IL skills training (Fourie and Krauss, 2011; Johnson and O'English, 2003; Klebansky and Fraser, 2013; Stockham and Collins, 2012; Whitver, 2017), which necessitates a narrow focus on the university context and an over-reliance on the academic librarian as a panacea for teachers' IL development. For example, in their research on implementing IL instruction into teacher education programmes, Crouse and Kasbohm (2004) and Earp (2009) use the terms "information literacy training" and "library instruction" interchangeably and call for increased exposure of education students and teacher-educators to academic librarians in order to promote their IL skills.

Similarly, scholarship that examines in-service teachers in their own right is rare (Shipman *et al.*, 2015) tending instead to focus on their abilities to teach IL skills to their students (Asselin, 2004; Moore, 2005; Whelan, 2003). These studies evaluate current modes of IL instruction in primary and secondary schools and often find them lacking (O'Connell, 1997). Like the academic librarian in university contexts, the teacher-librarian is considered the expert in IL skills and is recommended as the prime resource for developing successful IL instruction (Duke and Ward, 2009). Moreover, in the school

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context, the target of recommended instruction is the student, not the teacher. In comparison, little is known about how in-service teachers develop IL, let alone how they do so on their own. While there are studies on how teachers use IL skills to pursue CPD (Williams and Coles, 2007), there is also a need to understand the converse: how teachers use CPD to develop their IL.

Furthermore, although IL has been recognised as an essential skill in the information age since the 1980s (Addison and Meyers, 2013), its role in higher education, and especially teacher education, is still considered incomplete and insufficient (Stockham and Collins, 2012). This suggests that a majority of teachers will not have had a thorough grounding in IL principles during their initial teacher education. As such, it is also of interest to discover how in-service teachers perceive IL and its role in their work lives, learning and professional development.

Teachers' CPD

Teachers' CPD is of concern to governments and schools worldwide (Evers, *et al.*, 2016). High quality, effective teachers are necessary for student achievement and the teaching profession requires lifelong learning to respond to its evolving complexities (Caena, 2011; OECD, 2005). Despite this, there is a paucity of research within the CPD literature on what professional development actually occurs within ordinary schools and how teachers really learn (McCormick, 2010).

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Again, this gap in the literature is characteristic of scholarship that favours models which do not adequately account for a variety of contexts. Interestingly, the three main models of teacher CPD reflect similar themes as the approaches to IL, further suggesting a relationship between the two practices. First, the expert model, which dominates policy and educational institutions, asserts that CPD results from training by expert teachers, usually in formal settings (Burbank and Kauchak, 2003). Second, the craft model which takes a more organic approach, viewing teachers' CPD as a result of their personal experiences in the classroom: CPD is a natural process of honing one's craft through direct, self-guided experience (Sprinthall *et al*., 1996). However, neither of these paradigms adequately account for the holistic nature of professional development processes or the various contexts that affect teachers' learning. In contrast, drawing upon Lave and Wenger's (1991) concept of situated learning and Wenger's (1999) communities of practice, the interactive model perceives CPD as a product of teachers implementing information from external sources into their professional practice and learning from the results. The broad appreciation of what constitutes information from external sources encompasses information acquired through formal and informal sources alike, from collaboration, experiences and both directed and unintentional learning (Evers *et al.*, 2016; Macia and Garcia, 2016).

The interactive model thus presents itself as an appropriate framework for an investigation into how teachers practice and develop their IL. First, it permits an open interpretation of what constitutes teachers' CPD activities, allowing the consideration of all the shared experiences of participants. Second, in doing so, it also helps reveal

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teachers' sociocultural IL practices, which may otherwise remain hidden, as teachers may not recognise them for what they are.

Research context

This study investigated these domains in the context of Jewish education, as this is a site of culturally grounded information practices and unregulated CPD expectations. Learning is one of the core components of Jewish culture and identity (Twersky, 2003; Lehman and Kanarek, 2011). There are four aspects of Jewish learning that are particularly interesting from the sociocultural viewpoint adopted in this study of IL: (1) its interactivity, (2) its disputative nature, (3) its critical engagement, and (4) its restriction.

Interactivity

A traditional mode of learning which typifies the interpersonal nature of Jewish learning is *chavruta* which can be most simply translated as "paired study" (Holzer and Kent, 2011). However, chevruta connotes more than that; it is "a situation in which the learner is involved in a slow, meticulous open investigation and deciphering of the text, helping his study partner, weighing alternative interpretations, arguing with his study partner about possible interpretations and 'arguing with' the content of the text" (Holzer, 2006 p. 184). *Chevruta* study thus ingrains the lesson that "learning is an ongoing sociocultural activity in which participants work together to actively construct knowledge" (Kent, 2006 p. 5).

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Disputation

Another common learning model is the Beit Midrash-wide (literally translated to "house of interpretation") discussion where students and teachers engage in *machloket l'shem shamayim* (constructive conflict) (Holzer and Kent, 2011), an imitation of the ancient debates between Talmudic rabbis (Lehman and Kanarek, 2011). By doing so, students not only practise how to challenge others' ideas, including those of textual authorities, but also learn that doing so is acceptable and, moreover, encouraged. As Horowitz (2005) describes it, the "tradition of questioning tradition" is a quintessential aspect of the Jewish experience.

Critical engagement

Another important learning and teaching tool is delivering a "word of Torah" (*divrei Torah*), or a talk in which a person probes "analytically and inventively into the interpretation of Jewish sources and connects those sources with one another and with the contexts of Jewish life" (Shulman, 2008 p. 10). It involves bringing in multiple sources in support of one's interpretation, and relating the lesson to the lives of those listening. It is thus not only an information activity which demonstrates people's expertise, but is consequently also a basis for social esteem (nachas) (Posner, 2017).

Restriction

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All the above learning practices involve critical analysis and foster a culture which thrives on challenge and discussion. However, one of the most important caveats of "asking a Jewish question is that we seek genuinely to learn – not to doubt, ridicule, dismiss, reject" (Sacks, 2007 p. 108). Another is that, when posing a challenge, one must substantiate it with authoritative sources or a logical argument that is based upon central Jewish precepts (Sacks, 1989).

Research Aims and Objectives

The present study explored the experiences of in-service teachers within the Jewish educational context of an American Modern Orthodox Jewish day school. The study investigated the extent to which the characteristics of Jewish learning (which address disputation, critical judgment and restriction fostering evidence-based debate) impact the information practices performed by teachers, providing empirical evidence to support the sociocultural IL literature and bridging the gap between learning theory and IL theory (Julien and Williamson, 2011).

The research aimed to answer the following research questions:

1) How do Jewish day school teachers perceive their IL?

2) How do Jewish day school teachers enact IL as a sociocultural practice?

3) How do Jewish day school teachers develop their IL through CPD?

4) What is the relationship between IL and CPD within the context of a Jewish day school?

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The choice of a Jewish day school was guided by it representing an opportune context in which to research sociocultural IL practices and discover creative methods of CPD.

Research Design

The study sought to explore participants' lived experiences (Yanow and Schwartz-Shea, 2006) and gain in-depth knowledge of participants' subjective views, adopting an interpretative phenomenological perspective (Conklin, 2007; Finlay, 2012). Phenomenology appreciates that reality is subjective and socially constructed and seeks to understand "the way a person lives, creates, and relates in the world" (Conklin, 2012 p. 300). Adopting a phenomenological lens enabled the exploration of meanings that participants attributed to their lived experiences and to attain a deep level of understanding of individuals' personal and social worlds.

As this research aimed to address "how" and "why" questions the data were collected from a single setting of a Jewish day school, Heschel High School (pseudonym adopted for purposes of anonymity). Heschel High school is a co-educational, dual curriculum, Modern Orthodox Jewish day school in the United States. Comprising over, 200 students and 32 teaching faculty, it prides itself on its progressive bent and democratic culture. As a Modern Orthodox school, it endeavours to promote traditional Jewish values and practices while also encouraging democratic debate; therefore the tensions between critical engagement with information and religious restriction upon information are likely

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to be more prominently displayed than in other Jewish day school environments (Bechhofer, 2011).

Participant selection

Out of thirty-two teachers, eight responded and six agreed to participate in the research. Participants brought a breadth of different perspectives to this study. For instance, participating teachers ranged in age from 31 to 66 and taught a variety of subjects. Their employment history and their previous teaching experiences were likewise diverse (Table 1).

{**Insert Table 1.** Participant characteristics}

Data collection

Following recruitment, data was collected over a four-month period from September to December 2016. The data collection method used was semi-structured, in-depth interviews to "exteriorize" the subjective experiences and attitudes of teachers (Hannabuss, 1996 p. 22). Questions addressed the participants' previous background (e.g. how they became a teacher), the working culture of the school, approaches to learning and developing new knowledge, sources and methods of obtaining work-related information, information use, levels of confidence in performing work information related practices, future professional aspirations, perceptions around information literacy and lifelong learning, information literacy practices, and the differences between IL and

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CPD practices. The questions were open-ended to allow participants to respond on their own terms, using their own language and according to their own interpretations (Qu and Dumay, 2011). In this vein, jargon was limited until the very end of the interviews, when terms such as "information literacy" were introduced in order to ascertain participants' responses to such language. Interviews were recorded to permit verbatim transcription, which was necessary to "stay true to the actual speech, … privilege participants' words and avoid *a priori* assumptions" (Oliver *et al*., 2005 p. 1278).

Data analysis and interpretation

Interview data were rich, amounting to 255 single-spaced pages of transcript (containing over 130,000 words in total). First, the researcher read and re-read transcripts, to overcome any "initial … presumed interpretation" and yield to how "the individuals' lived experience … shows itself to consciousness" (Sandberg, 2005 p. 50). Thereafter, the data was input into NVivo software which facilitated open coding, allowing for themes to emerge from the data. Initial themes revealed through this process included *personal style*, *challenging colleagues* and *students as information sources*.

Once these themes were discovered, they were utilized for further, focused coding of first order themes (Taylor *et al*., 2015). After each interview was fully coded, themes discovered across cases were compared, leading to the development of second order concepts. This enabled the discovery of thematic "clusters", which were used to develop superordinate categories into which data was organized (Smith *et al*., 2009). For example, for the research question addressing teachers' perceptions of IL, these categories comprise *Core*

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Information Activities, *Role in the Workplace* and *Sources of Confidence*. Figure 1 provides a graphic overview of the coding process and the tables included throughout the discussion of findings demonstrate the link between the raw data, first order themes, second order concepts and superordinate categories.

{**Insert Figure 1.** Coding tree}

During the final step of analysis, the researcher engaged in a process of abstraction, moving iteratively between the emerging findings and extant theory to obtain a higher level of conceptualization (Eisenhardt, 1989).

Findings

Perceptions of IL

Surprisingly, participating teachers had not heard the term "information literacy" prior to taking part in this study: One of the participants' first response was to laugh and ask, "Did you come up with this term or is this a term that exists?" (Luke). Similarly, other participants were "…not really sure at all'" (Eli) or "never heard it before in my life" (Steven). Nevertheless, teachers were able to discuss the concept as it revealed itself to them through reflections on their information practices in the workplace. These discussions prompted the discovery of three major themes that illustrate how Heschel

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teachers perceive IL: as comfort in performing *core information activities*, as having a significant *role in the workplace* and as a competency that emanates from internal and external *sources of confidence*.

Core information activities

IL was perceived as a set of *core information activities* that people perform in the workplace, including information navigation, evaluation and implementation. Participants' conceptualizations conveyed a sense of IL as "know-how". For example, they considered people to be information literate if they were "comfortable", "fluent" or "well-versed" in their abilities and they had knowledge of these IL activities (Table 2).

{**Insert Table 2.** IL definitions: Core information activities}

Role in the workplace

Once participating teachers had defined IL, they concluded that it was a very significant practice, not only in general, but especially for its *role in the workplace*. As depicted in Table 3, participants honed in on aspects of IL that spoke to their work experiences when explaining why IL was of consequence. For instance, Eli perceived IL as a mark of esteem in the workplace, revealing how the loaded term "literacy" entangles IL with teachers' self-identities. For David, its value was connected to its transference to his students. For Luke, IL was perceived as "extraordinarily important" but the activity of trying to define it academically was considered to be pointless.

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{**Insert Table 3.** IL valuations: Role in the workplace

Sources of confidence

Every teacher communicated a high level of self-efficacy in their IL which was rooted in distinct *sources of confidence*: teachers' sense of expertise in their field and their abilities to access social networks (Table 4).

Eli and Luke shared a mutual appreciation for the role of experience emanating from subject knowledge and professional experience as a natural outcome of one's professional status/academic background. Steven saw his IL confidence as more closely tied to his vocational proficiency and experiential practice. Both Tara and Michael associated their IL confidence with interpersonal connections, drawing on their offline and online networks. Expertise in IL implied the need for close proximity to the immediate environment of work or to the specific field or practice (i.e. education).

{**Insert Table 4.** IL self-efficacy: Sources of confidence}

Sociocultural IL Practices

From discussions of participants' daily information-related activities, three major themes arose that illustrate how Heschel teachers' enacted IL as a sociocultural practice. These are the *sites of knowledge* that participants valued and accessed, their *ways of knowing and sharing* and the *conformity* that these practices produced.

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Sites of knowledge

Two modalities emerged as participants' main *sites of knowledge*: social and embodied information. These can be classified as intangible modes of information that emanate from social interactions and bodily experiences and reactions, respectively.

As illustrated in Table 5, participants utilized their colleagues and other educators for information and commonly pointed to the value of human information sources as centers of valuable experiential and professional knowledge and for enculturating teachers into the school's normative professional practices.

Embodied information was evident in the way in which participants referred to elements of their teaching practice that were based on instinct, personal style or emotions. As Tara put it, teachers are encouraged to "sense our gut" because "learning has to engage those deeper emotional levels … they're, intimately, necessarily connected". In addition, bodily experiences were regularly mentioned as crucial sources of information. Michael, for instance, valued physical immersion on campus and time spent participating in school activities. Similarly, on-the-ground classroom experiences were deemed the most important sites of information regarding teaching practice.

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{**Insert Table 5.** IL modalities: Sites of Knowledge}

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While textual information was mentioned by participants (e.g. in the form of other teachers' blogs or books passed along by a peer), it mainly consisted of materials used in delivering lessons, rather than documents informing teaching practice. The primacy of social and embodied information was also apparent in the way they relied upon it to develop their identities as teachers. Predominately, participants relayed that they "became" teachers through practical experience before attaining teaching qualifications. For example, Eli considered being a teacher "in his blood": "I fell in love with learning…I felt it was an area of talent and comfort for me, so … in a sense it was kind of organic" and something he felt destined for since his schooldays. Similarly, Tara remarked that, "I've always inclined towards being a teacher and I've gotten a lot of feedback over my life that I'm a good teacher". Therefore, teacher identities were developed through previous experiences, via feelings of deep-seated talent and through the encouragement of others. Becoming a teacher was something that occurred as a result of embodied experiences and social conditioning and which occurred before pursuing official training, which was considered more or less a "formality", as Steven put it.

Ways of knowing and sharing

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The significance of social and embodied information continued to be seen in participants' information activities. These were actions through which teachers came to know and simultaneously (re-)created their workplace information landscape. Three predominate *ways of knowing and sharing* were discovered at Heschel: collaborating, experimenting and habituating (Table 6).

Participants collaborated in many different ways, from instances of purposeful joint learning to the casual give and take of inspiration. Collaboration enabled participants to access and share rich sources of social information, offering advice and bouncing around ideas in the teachers' lounge. Collaboration also featured as a means of interpreting information. A common characteristic of Heschel teachers' collaborative activities was its disputative nature. Teachers regularly contested one another's positions, opinions and ideas in order to establish their validity and compliance with teachers' perceptions of the school culture - that challenging is central to knowing.

Perhaps unsurprisingly, given the importance of embodied information to participants, another significant information activity was experimentation. By trialing new techniques, adapting to classroom expectations, and operationalizing educational theory, teachers created experiences for themselves which acted as central sources of information for how to go about doing the work of teaching. As David put it, "I've had to … learn on the job, as it were. Not just 'what is a tenth grade level?', but 'what is a tenth grade level at [Heschel]?' … What's too difficult, what's too easy, what's just too much". Participants shared that student dynamics are constantly shifting and teenagers' learning needs are

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ever evolving, requiring them to repeatedly re-orient themselves within the contexts of their classrooms.

A third activity discovered at Heschel was habituating. As new teachers, Steven and Luke often checked in with the Principal to ensure their practices complied with the school's implicit expectations. However, all participants referred to students as integral mediums of workplace information, and not just for insight into how best to teach them. Tara referred to the student body and the school almost interchangeably and it was through exposure to students and from student feedback that teachers organically became habituated into school conventions. New teachers sought out information on norms and discovered them through their students, and veteran teachers adopted mentoring roles through which they acculturated their new peers into the school, from sharing experiences to guiding their content coverage. This active conditioning not only facilitated teachers' knowledge about the tacit information that made up their workplace landscape, but also gave them the power to mould that landscape and demonstrate their mastery of it.

{**Insert Table 6.** IL activities: Ways of Knowing and Sharing}

Conformity

While most apparent in the activity of habituating, the result of teachers performing all of these information activities was *conformity*. Collaboration, experimentation and habituation processes precipitated shared ideology, technique, and identity.

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Teachers took pride in being so embedded within the school's culture that they naturally approached their teaching practice through the lens of how best to fit that culture (Table 7). Similarly, participants communicated a prevailing sense of shared principles. David shared that "the things that we tend to hear already pass a threshold of being within the value system that we operate in", and other participants repeatedly referred to "our values" which became collectively assumed as a result of the constant relational learning that occurred at Heschel. For Michael, it was Heschel's "working culture, where we collaborate so much" that granted teachers a uniform educational philosophy.

One area where experimentation produced conformity was in teachers utilizing homogenous teaching practices. Participants shared stories of instances when practising a technique in their classroom led not just them, but also fellow teachers to adopt that technique. Because teachers' valued social and embodied information, experimentation was not a lone affair, but begot communal practices.

{**Insert Table 7.** IL outcomes: Conformity}

Overall, one of the most striking commonalities among participants was the degree to which they professed a shared identity. The faculty was described as being composed of teachers who "trust one another and feel like friends" (Steven), but even more common than this attitude of amicability was one of shared purpose: participants described a Heschel teacher as someone who is truly "dedicated to the school" (Luke), who is

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“mission driven” (Eli) and “share[s] a common goal” (Tara). Teachers’ collaborative activities fostered a sense of unity, common ground and interdependence. They reinforced these shared values and beliefs, which in turn led teachers to both internalize and project this ideology. The importance of demonstrating this identity to prove one’s expertise was exhibited by new and old teachers alike. It was through embracing and exhibiting shared ideology, technique and identity that teachers employed at Heschel became *Heschel teachers*.

Developing IL through CPD

Questions which explicitly asked participants about their IL development resulted in responses similar to David’s: “I don't know that I'm … that I do develop it”. Participants’ inability to identify how they improved their IL appeared to emanate from their persisting uncertainty over the term’s meaning. Therefore, the ways in which participants developed IL practices were gleaned through discussion of their general CPD activities.

Formal CPD

When the term CPD was introduced it was interpreted as solely referring to attending formal CPD events, such as seminars, professional conferences and workshops. Interestingly, while these were understood as “proper” (Eli) and “official” (Michael) forms of CPD, they were also considered to be minimally impactful or meaningful. As Steven reflected, “The way it's set up many times, formally, … it’s a waste of time”.

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Despite participants' disillusionment with most formal CPD events, attending such types of formal courses (e.g. learning new teaching methods and professional norms) was valuable upon implementation into the workplace. Tara recalled having to "work my way to the mechanics of how do I implement that [flipped classroom]", commenting that even "good ideas" from CPD are useless until "you take the mechanical step of actually integrating it in a real way into your classroom". Practice enlightened these participants about what does and does not help Heschel students thrive, providing them with robust sources of student- and experience-based knowledge through which they became more informed about their workplace landscape. David relayed that teachers are expected to "run seminars and showcase what we learned, what we took away and how we are going to implement it into our practice".

Informal CPD

Instances of informal CPD activities arose through circuitous discussions of workplace learning where participants shared anecdotes that revealed how they developed their IL while informally developing their professional practice. Specifically, through asking colleagues for professional help, observing other teachers to inform practice and critically reflecting on their professional experience, participants enhanced their knowledge of and agency within the workplace information landscape.

One of the most common forms of informal CPD employed by participants was calling upon colleagues to help them improve their professional practice:

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> "One of the most eye-opening discoveries I've made in how to be a successful educator is the notion that every student can learn in their own way… it has been a very challenging long process for me [to learn] differentiation. And I'm still learning … having [Teacher] … makes a huge difference for me, because…I really rely on her to help me and teach me … so I can do that" (David).

For Eli, who shared that his long-term professional goals included moving into a leadership position, senior administrative colleagues were his most valued source of professional development:

> "… it's important for me to have mentorship opportunities and growth opportunities, … you know, it's important, I think, to understand how people that have been doing this for a little bit longer than you have, how they're making decisions and all the different facets of making an institution a good institution".

For both teachers, colleagues were relied upon as experts because of their proven experience, knowledge and immersion within the professional and cultural norms of the school. By drawing on their colleagues' expertise, they developed strong ties with coworkers, reinforced the authority of experiential knowledge and re-created the culture of collaborative knowledge sharing.

Another way that participants engaged in informal CPD was through observation. Michael shared that Heschel has an open-door policy amongst teachers and students,

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where both are able to walk in and out of classrooms without disturbing lessons. As Tara put it, “seeing them in action, … we have some remarkable people and … watching them teach and observing student reactions … facilitates my growth”. Similarly, Luke went to “other people’s classes … to find out what it is that they’re doing that is successful” and Steven got “a vibe of what they're doing and how their teaching approach is different from mine and adjust[ed] accordingly”. By engaging in CPD through observation, teachers learned and practiced normative ways of knowing and teaching, and consequently propagated these conventions.

A third method of informal CPD performed by participants was that of reflection. As David put it, “I feel fortunate that I am working in a profession where I have ample opportunity to reflect upon what's still, you know, where I can improve”. Participants indicated that this reflection happened almost constantly. For Michael, it occurred “about each week … I kind of assess what I'm doing, right? And how successful things are, or things that didn't really succeed”. For Steven, it happened nearly every day and was developmental:

> “I think a lot of it comes down to taking a moment and thinking about, ‘well, what worked the previous day, and perhaps what didn't work the previous day?’, you know? … I really think, with teaching, it's kind of malleable, kind of flexible, something that’s being moulded, day-to-day, so it's like, you're never really at a point where it's perfect … and trying to figure out how to change the next day and the next week to be better”.

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In performing this process, Heschel teachers enacted and perpetuated the school's accepted (and expected) experiential "way of knowing" and promoted the value of their insight by basing it on experience. Furthermore, in doing so, they further demonstrated their inculcation within and adherence to the school's values and ideology.

Relationship between IL and CPD

Analysis of the data indicated that IL was not only developed by pursuing CPD, but also that IL was a catalyst for CPD. IL and CPD were difficult for teachers to distinguish from one another. As Steven realised, "I'm kind of thinking of them as the same thing", and as Eli explained, "I guess my issue is that I see them so closely connected … so it's hard to say how one affects the other … I'd say they're almost the same". Tara agreed, commenting, "Wow, I guess I've been thinking of them in the same basket, in a way, because logically they are".

In addition to these explicit statements, participants often used similar language to describe both their IL and CPD. Sentiments like, "It's just learning by doing, really" (Luke) and stories about asking colleagues for advice were related to both their information and professional development activities. Upon further interrogation, the only differences participants could decipher between their IL and CPD activities were when they returned to conceptualizing CPD as a formal enterprise:

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> "I tend to think of my own information literacy practices … as more organic, more something that proceeded naturally from the very process of teaching and interacting with my colleagues, … whereas I tend to see these others [CPD activities] as more having an agenda … At work it seems spontaneous, natural – I've got something brewing in my head, I'm concerned about a content area, or I'm worried about a student and I just have a strong motivation to seek out people who can inform me, help me with those things. Whereas, with professional development, there's sometimes a little bit of artificiality".

Participants shared how accessing the IL modalities, implementing the IL activities and achieving the IL outcomes (identified earlier) helped them collect new information they could add to their professional repertoire (Table 8). In terms of embodied information, classroom experience in particular was frequently noted as an instigator of professional development and participants appreciated this process as being organic, spontaneous and natural. As Tara shared, "having that experience with the students … is one of the things that I get the biggest kick out of … They take things in directions that I didn't anticipate, and it's really exciting …" Participants explicitly appreciated that the most effective way of learning how to successfully teach their students was to absorb and act on the information learned in the classroom.

Participants also repeatedly mentioned other teachers as conferrers of information which helped them improve their practices. Eli shared that, "if there's something that I'm having difficulty teaching, … I'll often go to [Teacher] for help". For Steven, it was mostly about "communicating with my peers and colleagues, … just being inquisitive and curious, …

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definitely helps me get better". For Michael, regular communication with his colleagues provided imperative information about his students, which he needed in order to "begin to put together a picture of what the problem is".

Another theme that arose from the data was the importance of trust that emanated from shared identity – from mutual dedication, amicability and collectivism. Trust is what allowed participants to rely upon one another for professional advice and help, to collaborate and respect each others' input: "at the root of it what makes it comfortable is like the element of trust between everyone" (Steven). This trusting atmosphere enabled the casual exchange of inspiration which was found to support IL activities. Almost all participants commented on gathering new pedagogical ideas from colleagues based on conversations had or overheard in the teachers' lounge. Teachers chatted about their teaching practices and educational opinions in the same manner as they spoke about their personal lives, and participants revealed that they considered these conversations incredibly (in)formative for their professional careers. Thus, participants natural IL practices continually added to their professional toolboxes.

In addition, by performing the IL activities of challenging and habituating, participants stayed informed about Heschel's workplace information landscape and facilitated their career progression. For example, by challenging an admission decision, Eli found out about an aspect of administrative decision-making that was helpful for pursuing his goal of moving into school leadership. Similarly, by assuming the school's value for continued learning and practicing IL, teachers are able to stay "up-to-date" (Steven), "remain

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relevant" (David) and "not becom[e] stale" (Eli), further emphasizing the role of IL (and the learning it entails) in teachers' CPD.

{**Insert Table 8.** IL outcome: CPD}

IL as contextual CPD

The concept of *expertise* arose as a defining characteristic of both IL and CPD. IL manifested as contextual CPD which was clearly apparent in participants' notion of expertise, which meant knowing "the school culture" (David): experts were considered "… people who are successful in the classroom, who have a feel for what [Heschel] is … when you're in a new culture, it takes a year or two to really get the sense of what we're trying to do …" (Eli).

Relating well to the students, being successful in the classroom, understanding the religious aspects of the school and acting on the values of the school were all communicated as aspects a Heschel teacher must master in order to fully embody the school culture. Through performing IL, teachers at Heschel first became *Heschel teachers* (see Section 4.2), but by continuing this process in context, they became expert Heschel teachers. This required teachers to demonstrate their command of Heschel's workplace culture which required not only passive conformity, but an active conformity: the expert enacted IL to learn, then embody and then (re)produce the essence of

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Heschel's ideology and identity. Thus, IL not only enabled CPD for teachers' personal practice, but acted as their CPD within their organisation. It was only through others' recognition that a teacher (re)produced the Heschel culture that she or he could move up the ranks and into a place of authority in the school.

Discussion

Introduction

This study carries with it limitations which must be considered. Most of the limitations emanate from the study's qualitative, phenomenological design, which entails a lack of generalisability and potential for researcher bias. Qualitative findings are highly dependent on the specific contexts in which they were collected. The generalisability of the results of this research is therefore limited (Patton (2015). As this study explored the life-worlds of only six teachers within a relatively unique Modern Orthodox American Jewish day school, its conclusions are not generalisable outside of this context. Furthermore, even within the case studied, there were necessary restrictions placed upon the researcher's situational awareness: it was not practically possible for the researcher to gather data on all events that occurred within the setting studied. However, this study did not pursue generalisability, but rather validity and reliability, to ensure that its contributions are credible, dependable and confirmable by future research.

Perceptions of IL

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The analysis of data revealed a number of insights into teachers' perceptions of IL. Despite having completed advanced education degrees within the last 15 years, participants were entirely unaware of the term "information literacy". Purdue (2003 p. 655) has argued that one of the central issues is the word "literacy", as it "connotes a very basic educational attainment: the minimum, in fact". Therefore, admitting to being "information illiterate" could imply that teachers may have failed to attain a skill identified as basic to being an educated adult. Furthermore, teachers' revealed the incompatibility of "information literacy" perceived as generic skills and their real-life performance of it. Thus, the IL terminology may be presented as a limiting factor in its understanding and application outwith the field of information science (Bruce, 1999; Purdue, 2003), and especially to workplace contexts (Lloyd, 2010a).

Sociocultural IL Practices

This study offered deep insights into teachers' real-world practice of IL which was of a social, experiential and interactive nature. Teachers preferred using social and embodied information, as well as following interactive ways of developing knowledge of and constructing information practices within their workplaces. Previous empirical research has similarly confirmed these findings, emphasizing the primacy of social and embodied information over textual information in the workplace (Williams *et al*., 2014). However, in the context of this study, sociocultural IL (Lloyd, 2005) was core to teachers' everyday IL practices, while textual information was less informative of practice and less integral to the development of their subjective positions.

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In addition, participants further considered their teaching qualifications as more or less formalities, which did not serve to make them teachers. Instead, teachers' development of subjective positions ("I am a teacher") occurred through an internalization of teaching talent – being told they are good teachers and feeling like teaching is naturally part of their character – and through informal or unqualified teaching performed before undertaking teaching qualifications.

By emphasizing the significance of informal, unintentional learning through collaboration, this study offered evidence to support that IL in the workplace is primarily an interactive practice which is not necessarily connected to an information need (Lloyd, 2014; Limberg et al., 2012; Tuominen et al., 2005; Wang, 2007). This notion is antithetical to the skills-based IL approach, which positions identifying information needs and developing seeking strategies to fulfil them (ACRL, 2000;, 2016; ALA, 2011; Bundy, 2004).

Moreover, this study augments the concept of IL as a practice by introducing the significance of sharing information, which contributed most to teachers becoming information literate within their context, highlighting the importance of communication and social networks to the practice of IL (Crawford and Irving, 2013; Inskip, 2014). Collaboration was shown to be not only a way for novices to learn norms from experienced faculty (Burnette, 2017), but a process that allowed all employees to challenge one another and collectively generate accepted norms, values and identities.

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In this context, IL was thus not only a "cultural and transformative process" (Lloyd and Somerville, 2006 p. 188) for individual practitioners, but for the entire community of practice. The setting of the information literate practitioner is not a static one adopted and perpetuated by individual practitioners, but a fluid scene that a community of practitioners collectively and continually (re)creates through sharing. Consequently, the findings of this study reinforce the concept that IL is predominately a social practice (Schatzki, 2001) which acts as a "generative source of knowledge" (Gherardi, 2009 p. 115). In that sense, IL "cannot be viewed as a stage that can be accomplished" or "a state that has an end point"; instead, it is an "ongoing activity of knowledge construction, knowledge deconstruction and knowledge extension" which takes place within a changing context in which people are embdedded and are "influential agents in changing it" (Martzoukou and Abdi, 2017 p. 657).

Furthermore, this study revealed that the outcome of performing IL, in addition to becoming more informed about a workplace's information landscape (Lloyd and Williamson, 2008), is also conforming to it. Through participants' agency (their performance of collaboration, experimentation and habituation) and the joint nature of these activities, a shared, uniform experience and understanding of workplace ideology, technique and identity was co-created. While seemingly incompatible with the idea of the information landscape as fluid and constantly (re)created, it was found that the very process of co-producing the information landscape produced conformity among practitioners.

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This study thus demonstrates that practitioners participate in creating these norms and values, and that the communal nature of this process induces conformity to practices that "emerge through co-location and co-participation" (Lloyd, 2012 p. 744). It is when practitioners "stir themselves in" (Kemmis *et al*., 2017 p. 48) to practices and explicitly demonstrate their conformity to, and therefore ownership of, those practices that they become not just a practitioner, but a full, information literate member of the community of practice (Wenger, 1999).

In adopting a sociocultural lens, this study helps to fill the gap between learning theory and sociocultural IL theory (Julien and Williamson, 2011). There are clear correlations between Jewish learning approaches and the IL practices discovered at the Jewish day school studied. Findings showed that Jewish day school teachers – Jewish and non-Jewish alike – enact IL through collaborative activities which mimic *chevruta*-style learning (Kent, 2006), disputations between colleagues which mirror the method of learning through *machloket l'shem shamayim* (Holzer and Kent, 2011) and the everyday sharing of information to help colleagues' performance of teaching practice which echoes the delivery of *divrei Torah* (Shulman, 2008). Similarly, like these learning practices, participants' IL activities are constricted by a requisite adherence to core values: in this case, the school's educational ideology, acceptable techniques and teacher identity, rather than adherence to the *Torah* (Lehman and Kanarek, 2011; Sacks 1989).

Developing IL through CPD

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This study found that teachers strongly associate CPD with the traditional form of learning through courses, conferences and other formal, structured events (Hoban, 2002; Wilson, 2006); yet they place higher value on the learning that emanates from informal CPD (Thacker, 2015) and practical experience (Allen, 2009).

More importantly, teachers' real-life CPD experiences closely reflected the interactive model of CPD (Macia and Garcia, 2016). Teachers' CPD presented a situated learning practice (Lave and Wenger, 1991), comprising of drawing information from various sources: formal seminars, collegial advice, observations and reflection, and operationalizing that information within the context of their school and classroom, lending empirical support to the growing challenge to the dominant expert model of CPD (Caena, 2011; Evers *et al.*, 2016; Macia and Garcia, 2016). For teachers, real *learning* from CPD could only occur through contextualization. Current research which considers how to improve in-service teachers' IL tends to recommend librarian-run workshops, technology-training, and faculty development programmes as methods for inculcating IL within teachers (Davis-Kahl and Payne, 2003; Fister, 2009; UNESCO, 2011). This study, however, demonstrated how teachers successfully develop their IL in context via engagement with natural IL practices. Within the context studied, such activities included contextualization of CPD deliverables within the school environment, collaboration for learning teaching skills, observation for pedagogical inspiration and reflection for learning from experience, demonstrating distance between real-life experiences and generic, decontextualized concepts of IL and how people learn.

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Should teacher education programmes emphasise the benefits of the informal, and even unconscious, CPD that naturally occurs in practice, teachers are more likely to approach their everyday practice with an attitude of continuous development. Practically, this entails teacher educators promoting the adoption of "shared thinking and cognition, creative joint inquiry, collaborative ways of working and joint democratic responsibility" (Korhonen, 2009 p. 214). To accomplish this, teacher educators can draw upon Jewish learning and teaching methods, such as *chevruta*, *machloket l'shem shamayim*, and *divrei Torah*, which have proven themselves over centuries to be successful at inculcating these traits (Shulman, 2008). In this way, teacher educators can promote student teachers' abilities to develop social capital and manage interactions and discourses in their future communities of practice and therefore be able to "enter the workplace work-ready" (Lloyd, 2017 p. 105).

Relationship between IL and CPD

This research offered some initial insights into the intersection between IL, CPD and learning. Although it is not possible to generalise these findings to other teachers beyond the context of this study, the results present an interesting interplay of these processes as a a single, organic situated learning practice of becoming an expert in context. Currently, research on IL, CPD and learning is disparate; rarely does research pronounce a connection between IL and theories of learning (Moring, 2011; Wang, 2007; Wang *et al.*, 2011) or between CPD and theories of learning (Billett, 2013; Bransford *et al.*, 2000; Korthagen, 2010).

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This research found that IL is what makes someone an expert within their context. "Experts" are those who have fully *assimilated* into the culture of their profession and organization. They are perceived to most fully embody the workplace culture because they demonstrate their command of the "beliefs, values, and ideologies that drive [the] community of practitioners" (Lloyd and Somerville, 2006 p. 192). But in order to embody the workplace culture, they must first decipher it, practice it, demonstrate it, and reproduce it. IL was therefore shown to be both a means and an end. Professionals gather information through context-approved modalities and activities to learn about workplace culture and practice and, in so doing, they embody and (re)produce that culture and information landscape (Lloyd, 2010b; Sundin, 2008). Thus, through the act of practicing IL, professionals become more information literate and more professionally developed within their workplace context. The more information literate they become, the more expertise they are perceived to have and the more authority within that context is achieved.

This finding enhances O'Farrill's (2010 p. 729) argument that "people who perform well (experts) in workplace environments are ordinarily information literate in that context" and further supports the growing recognition that "workplaces have a greater need for people who are good at collaborating and sharing knowledge than smart individuals who, when they leave the enterprise, take their skills and expertise with them" (Tuominen *et al.*, 2005 p. 338). However, expertise is so dependent upon unique workplace contexts that it cannot truly be taken out of one context and applied to another. The workplace benefits from retaining information literate, expert staff because their participation in

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communal IL activities raises the IL, and therefore CPD and learning, of the entire workforce (Williams *et al.*, 2014). Lave (1993, p. 6) explains that "there is no such thing as 'learning' *sui generis*, but only changing participation in the culturally designed settings of everyday life", and thus that it cannot be measured against universal educational standards (Lloyd and Somerville, 2006). As the context of the present study was limited to a small number of teachers and within a very specific learning context, expanding a similar exploratory approach to other groups of teachers can help to develop richer understanding of how this process takes place in diverse learning environments.

Another significant facet of the IL-CPD-learning process that this study exposed was its organic nature. Participants appreciated their workplace IL to be spontaneous and natural, and their learning to be an organic outcome of everyday practice. Rather than being a prescriptive set of skills, IL was shown to proceed naturally from the very process of performing work and interacting with colleagues in "messy and open-ended" ways (Lloyd, 2010a p. 73). Teachers' learning was thus shown to be "a socio-cultural process relying on discursive resources" (Korthagen, 2010 p. 104) that they informally and organically helped to produce.

Conclusion

This study positions itself within emergent scholarship which critically revisits the skills-centered approach to IL (Lloyd and Williamson, 2008; Lundh *et al.*, 2013; Papen, 2013; Sundin, 2008; Martzoukou and Abdi, 2017), the expert model of CPD (Kyndt *et al.*, 2016; Macia and Garcia, 2016; Thacker, 2015) and cognitive constructivist views of

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learning (Billett, 2013; Korthagen, 2010; Warford, 2011; Wenger, 2010). Its findings supply some initial empirical evidence that IL, CPD and learning are interconnected processes,which may not be fully achieved following solely traditional, didactic modes of education. For example, in this study, IL emerged not simply as a skill that can be learnt through bibliographic instruction (Crouse and Kasbohm, 2004; Duke and Ward, 2009; Earp, 2009). Similarly, CPD could not be achieved only through participation in higher education-led programmes (Geldenhuys and Oosthuizen, 2015; Wilson, 2006) and learning was not only an individual's personal psychological process (Liu and Chen, 2010; Powell and Kalina, 2009). This does not discount the individual/cognitive approach, but presents it as an aspect of a broader, more synergistic endeavor. This study offers preliminary empirical evidence for bringing together converging IL contexts and experiences, highlighting that in addition to being formal and skill-based, they can also involve an intertwined process of IL, CPD and learning which are social, embodied, constantly changing and organic (Martzoukou and Abdi, 2017). This research therefore supports further exploration of the sociocultural approach, interactive model and practice lens to explorations of what IL is, what constitutes CPD and what learning actually occurs within diverse learning contexts, rather than "prescription[s] of what [these] should be" (O'Farrill, 2010 p. 729) and positions them within a constantly changing learning context.

However, due to the limitations of this study, additional research within varied school contexts is required in order to create generalizable evidence and to showcase diverse examples of interactions between these processes from different socio-cultural lenses.

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While this study covers much conceptual ground and provides rich empirical insights, it does so based on findings from a narrow context. Therefore, as well as contributing to knowledge, this research also contributes an agenda for future research to similarly delve into the life-worlds of participants in other unexplored workplace contexts in order to investigate their situated IL, CPD and learning practices. Should similar themes emerge from research in other contexts, such research may lend additional empirical weight to this study's conclusions.

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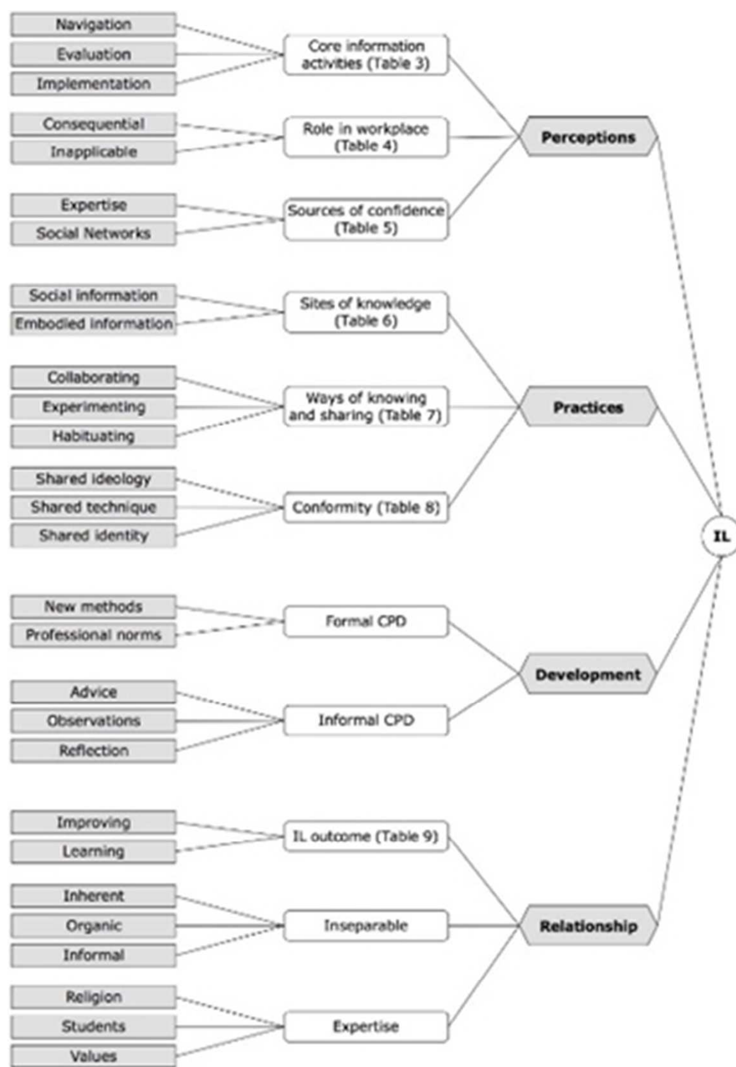

Figure 1. Coding tree

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Teacher*	Age	Years at Heschel	Education Background	Previous Teaching Experience	Religious Background	Subject
Eli	30s	6	Smichut, MDiv, MA Education	None	Jewish	Talmud
Luke	40s	1	BA History, PhD History	4 years	Baptist	American History
David	50s	11	BA, JD, MA Education	None	Jewish	Political Science
Tara	60s	10	BA Human Biology, MA Psychology, Teaching Credential	2 years	Jewish	Jewish History and Psychology
Steven	30s	1	BA History, MA Education	6 years	Hindu	Chemistry
Michael	40s	3	BA, MA Education, PhD Education (in progress)	13 years	Catholic	Calculus

* Names of teachers have been anonymised

Table 1. Participant characteristics

Reference Services Review

Raw data	First order themes	Second order concepts
"…what comes to mind is the comfort level of individuals with how to access information" (Michael).	Access	Navigation
"I feel almost like information literacy means, like, … how fluent somebody is in … different worlds, … how well-versed somebody is at walking into a place … and knowing how to find … things" (Steven).	Seeking	
"Knowing what the parameters are, you know, what some of the avenues are and what some of the potential pitfalls or challenges are and how to negotiate that is part of information literacy" (David).	Negotiation	
"The ability and willingness to … listen to new information, be able to comprehend what you are hearing … and mine and sift through … that information" (Eli).	Curation	Evaluation
"… somewhat in parallel with what's meant by emotional literacy, in terms of being able to perceive and interpret…" (Tara).	Interpretation	
"… you really need to know what it is, inside and out, that you're bringing in, I suppose, … Turning that around … in a way that sort of acknowledges what that information is …" (Luke).	Examination	
"…a personal application piece, like, you should be well-versed and comfortable enough to know whether it's relevant to, kind of, your needs" (Michael).	Relation	Implementation
"Taking what you learn and making some sort of practical use out of it … information by itself is pretty useless, unless you have some sort of practical application for it" (Luke).	Application	
"… a broad grasp of … different ways of conveying information, different ways of expressing information, absorbing and disseminating information - I would say all of those kinds of things" (Tara).	Dissemination	

Table 2. IL definitions: Core information activities

211x138mm (96 x 96 DPI)

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Raw data	First order themes	Second order concepts
"I think it's important … like, making sure that I'm always asking inquisitive questions" (Steven).	Learning	Consequential
"… a lot of both the frustrations that I've had as a teacher ultimately come back to questions of information, you know, … access to it, and lack of it, and a lot of the greatest satisfactions, or sense in being able to be as competent as I want to be and to deal with both colleagues and students in the level, manner I want to, all come back to information literacy in a lot of ways" (Tara).	Competency	
"If I'm not good at that, I'd want to be better at that … I don't want to be known as a person that is not literate in information … if I was hiring someone, I'd want them to be like that" (Eli).		
"… a lot of it is (*um*) getting a sense of (*um*) the full picture … understanding that full picture is important, yeah … it provides more context and provides more of a … sense of clarity around an issue or a piece of information, I think that's huge" (Michael).	Comprehension	
"This is what it sounds like: jargon … I think that, in academia, there's a lot of these terms thrown around and sometimes I think that these terms exist solely so people … can have something to write a dissertation about … Based on my definition, I think it's extraordinarily important. It's just … I think couching it in particular terms is meaningless to most people" (Luke).	Jargon	Inapplicable
"To me it's very, very important … but I've found that students here are accessing information with less frequency than in the past … so it's actually a step before that … I'm kind of at the pre-stage, it's re-introducing the notion that there's information out there … then I want to start getting more sophisticated in it" (David).	Premature	

Table 3. IL valuations: Role in the workplace

220x136mm (96 x 96 DPI)

Reference Services Review

Raw data	First order themes	Second order concepts
"I'm generally pretty confident. I feel pretty comfortable in what I'm doing … I have an academic background, so … I know what's what" (Eli).	Academic background	Expertise
"I am extraordinarily confident when it comes to these things … I mean, I'm a professional historian, so I think I have a pretty discerning eye when it comes to what's good and what's a waste of time" (Luke).		
"I've never really thought about it much other than I just do it [IL] … I'm just self-taught, really … And then, only afterwards do I learn terms, … and realise, 'oh, yeah, that's, that's what's going on there'" (David).	Natural ability	
"I would think that my information literacy would be pretty high … I just think that it comes from my experience in teaching, experience in the classroom …" (Steven).	Teaching Experience	
"I feel like I have a fairly high information literacy … I generally feel fairly confident – when it's something that I'm not sure that I have enough expertise – in seeking help someplace else in evaluating it … When it comes to kind of one-on-one seeking information from people, especially here at [Heschel], I feel fairly comfortable about where to go" (Tara).	Colleagues	Social Network
"I feel highly confident … I think part of it is built within … 15 years of experience in education … of being in multiple institutions and not burning any bridges … So being able to kind of access information from different people … I feel like you know, connected to accessing information or seeking information from people in educational communities" (Michael).	Professional Peers	

Table 4. IL self-efficacy: Sources of confidence

227x122mm (96 x 96 DPI)

Reference Services Review

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Raw data	First order themes	Second order concepts
"… he's a great resource for what a science student is looking for, because he was a science student himself for so long" (Steven).	Colleagues' insights	Social information
"Oftentimes, I'll go to [Teacher] and get his ideas … his ideas are spot-on" (David).		
"Anything that is … from someone who has real education experience and real background is considered valuable" (Eli).	Peers' opinions	
"Being new to the culture, … it's really nice to get in on some of the conversations, and it helps me when I'm developing my coursework, you know, as to what people are saying" (Luke).	Informal conversations	
"I don't know where it came from…it wasn't anything that I would have, if anybody had asked me, 'What would you do in that situation?' - it just was in that moment, that's what worked" (Tara).	Instinct	Embodied information
"The other thing was just physically being here. I went to a number of different events, joined a book group they had going, attended assemblies, the graduation, … just, like, immersing myself" (Michael).	Presence	
"I keep returning to the notion of authenticity. You know, these sort of plans that people have come up with for teaching - if it doesn't work with my personality, then it's just not gonna work" (Luke).	Personal style	
"A really important piece is 'am I excited about this?' … is it causing my heart to beat a little bit faster, am I, like, 'Oh, wow, this is really great!'… if I'm excited about it, that shows it's … worthwhile" (Eli).	Emotional response	
"I don't feel the need to defend or preface my experiences when I share them … there's a general attitude… of respect for one another, we are … very good teachers, and our experience is valuable" (Tara).	Personal experience	

Table 5. IL modalities: Sites of Knowledge

216x146mm (96 x 96 DPI)

Reference Services Review

Raw data	First order themes	Second order concepts
"…teachers bring up problems they've been having and everybody pitches in with, 'Here's something that's worked in my class', or 'This has worked with that student'" (Tara).	Advising	Collaborating
When the 9th grade History and Jewish History modules were combined, the two teachers involved were reported to have said that they looked forward to learning each other's subjects together (School newspaper, Sept. 2, 2016).	Paired Learning	
"… I just hear what other teachers are doing – there's some creative people here who come up with interesting things, and it's stuff that I would have never considered" (Michael).	Inspiring	
Teachers were often observed debating when working together on lesson plans: "I would not do that – why do you want to do that?", discussing school policies: "are we a business or a school?", and sharing teaching techniques: "is the Summer reading really useful, though?" (Observations, Sept. 19, Nov. 18).	Challenging	
Two teachers, described as friends, were reported to have clashed over the proper way of holding the election for a student committee, each arguing that the other had breached the school's democratic values (School newspaper, June 14, 2015).		
"I don't know - never done it before! But we'll see what happens! This is a trial and error right now … I'll assess how things went, I'll look at their grades and see how they did … and adjust" (Luke).	Trialling	Experimenting
"… it's sort of on the job, learn by doing … In these first few months, the plan has had to adapt, you know, just realising week by week, 'what is it that the students want?'" (Steven).	Adapting	
"There'll be an … article, and it's amazing, but at the end of the day, you want to know 'how do I do it and why should I?' So I'll look at research, but really try to find practical steps and see if it works for my class" (David).	Operationalising	
"I actually ran that one by [Principal] beforehand … and he goes, 'that's fine' and he thanked me for asking him" (Luke).	Verifying	Habituating
"…I'm always touching base with [GS Principal] to see the best way to go about it. It's never from some authoritative, crazy place … It's like, 'you should consider dialling it back a bit'" (Steven).	Familiarising	
"A lot of it is learning from your students what's going on, what's expected, … in terms of norms and things, obviously I learn from people in admin, but the students help a lot as well" (Michael).		
"I try to act as a mentor for new teachers, to acculturate them to the [Heschel] environment, and share my experience" (David).	Mentoring	
Eli was observed coaching a new teacher in what content to cover in class, telling him not to teach a piece of rabbinical commentary that contradicted the school policy that girls not wear *tefillin* (phylacteries) (Observation, Dec. 9).		

Table 6. IL activities: Ways of Knowing and Sharing

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Raw data	First order themes	Second order concepts
"… we have enough of a cultural foundation … – we know our institution, our students and our community's needs – to think about pedagogy in a way that works for us" (Eli).	Culture	Shared ideology
"In terms of pedagogy, it has to be consistent with our values … there's things that sound intriguing, … but we would never switch to them, because of competing values" (Tara).	Values	
"… the result of our working culture, where we collaborate so much, because we don't want to be siloed, … is that we all have one vision, in terms of educational philosophy" (Michael).	Philosophy	
"In my own classroom, I've really learned the value of formative assessment, so … I was able to make the case for frequent, low-stakes checks for understanding … over time, the faculty bought into it and made it part of their regular practice, so it's really become part of the school culture" (David).	Persuasion	Shared technique
"Just … encouraging by example … I made posters, so I literally had them [essential questions] on the wall and it inspired other teachers to put them in their classrooms. So it kind of spread, not in a prescriptive way: 'All teachers will have essential questions posted' - but in this more organic way" (Tara).	Osmosis	
"We're all kind of racing towards the same goal … we're more dedicated to the school than I think the kids realise" (Luke).	Dedication	Shared identity
"… the staff genuinely care about one another, … everyone knows each other really well … people are so friendly with one another, we trust one another and feel like friends" (Steven).	Amicability	
"The kind of cohort we have are people who can say, 'I am not just an English teacher. I teach English most of the time, but I'm an educator at [Heschel]" (David).	Collectivism	
"There is a general camaraderie … we are mission driven individuals, people that don't treat it as 'just my classes and then I'm out of here'" (Eli).		

Table 7. IL outcomes: Conformity

165x142mm (96 x 96 DPI)

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Raw data	first order themes	second order concepts
"… everyday, there's a little small piece added, and it ends up being, like, a big chunk of professional development … it's all part of experience … what you learn everyday on the job informs you and helps you become better." (Steven).	Embodied information	Improving practice
"… as I get exposed to information from other teachers, from my students … as I'm able to use that to get better – because I know I can be better – … it absolutely helps me, you know, in professional development." (David).	Social information	
"We really click … we just like talking to each other, … if that didn't happen, then maybe I wouldn't be as receptive to the constructive feedback that's happening, because I wouldn't really feel – I wouldn't see them as friends" (Luke)	Amicability	
"We have a ninth grader that there's been issues with and, knowing we didn't accept everyone, wondering why we accepted this kid ... I said, 'What was the thought process that was going on?' … and that also helped me … to understand how those decisions are made." (Eli).	Challenging and Habituating	Learning new things
"We're all in this one faculty room, on top of one another, so it's chaotic … but I also feel like there's a lot of fertility in that … being with other teachers energises me, and gives me new ideas and new perspectives that I really value" (Tara).	Inspiring	
"… we have these cool conversations and dialogues, and I think that really enhances all of our perspectives, how we teach, you know, so they can incorporate my stuff and I can incorporate theirs, it's really kind of cool like that" (Luke).		
"being here at [Heschel], being in an educational community that cares about learning … is important … professionally. It keeps me fresh." (Michael).	Shared Values	

Table 8. IL outcome: CPD

193x128mm (96 x 96 DPI)

Reference Services Review