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Learning to put out the red stuff: becoming information literate through discursive practice
Abstract

From recent doctoral research into information literacy and workplace learning an understanding of information literacy as a complex constellation of experiences and relationships with a range of information modalities is emerging. It is constituted through the connections between people, artefacts, texts and bodily experiences that draw a person into context and enable them to know the landscape. A three-year qualitative study of firefighters in regional New South Wales, Australia, is described. It was framed by constructionist thinking about the nature and role of information literacy in learning about practice and profession and about the relationship between power and knowledge. The findings of the study support a new definition of information literacy that recognizes information literacy as a way of knowing – that is, more than just the acquisition of skills and attributes. Becoming information literate in the workplace requires experience with social and physical modalities as well as with textual information.

Keywords: information literacy; constructionism; embodiment; firefighters
Learning to put out the red stuff: becoming information literate through discursive practice

Anne Lloyd

Introduction

Learning to become a firefighter is a complex construction which threads together information from a constellation of sources within an information environment. The process of learning to become a firefighter does not simply occur through an engagement with external and codified sources of information (i.e. text). It also requires a relationship and experience with information that is socially afforded and physically located. The focus of the research described here was to identify how novices and experienced firefighters sought, used and experienced information in learning about their practice and constructing a workplace identity. This research has led me to describe information literacy as:

... a catalyst for learning and at the same time inextricably enmeshed with learning. Information literate people have a deep awareness, connection and fluency with the information environment. Information literate people are engaged, enabled, enriched and embodied by social, procedural and physical information that constitute an information environment. Information literacy is constituted through the connections that exist between people, artefacts, texts and bodily experiences, which enable individuals to develop both subjective and intersubjective positions. Information literacy is a way of
knowing the many environments that constitute an individual being in the world [1,2,3].

The aims of this article are to describe an alternative view of information literacy that has emerged from the research and to explore the modalities of information which are required to learn about the practice and profession of firefighting.

**Current conceptions of information literacy**

In the past 30 years descriptions of information literacy have generally been confined to formal educational environments. Within these environments, information literacy is understood to facilitate an individual’s relationship and experience with information that is made available through external and codified sources (i.e. in print or online). In order to develop this relationship and be deemed information literate, the individual must acquire skills and attributes that enable them to ‘access and evaluate information, to think about information and to demonstrate and document the process of that thinking’ [1, p. 83]. Shelia and Webber and Bill Johnston [4] refer to these skills as information seeking, informed choice of information sources, evaluation of sources, selection, and ethical use and presentation of information.

This approach to understanding information literacy has emphasized the individual’s relationship with information as it is displayed by their demonstration of a range of prescribed and measurable skills or competencies such as those listed in guidelines and standards for information literacy education. In an

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educational context, information literacy as a skill-based literacy is seen as cognitive, measurable and transferable to other contexts. The process of transfer across contexts, e.g. from school to work, is viewed as largely unproblematic, a view that underlies statements about information literacy facilitating lifelong learning [2].

An emerging and alternative view of information literacy
The view that emerges from the research described here is that information literacy is more than just the development of skills. Information literacy is a way of knowing about an information landscape, through embodiment within context. This finding, one of the several from my research [3], represents a shift away from viewing information literacy as the sum of its practices, to examining information literacy as a catalyst to learning in all contexts. This approach to information literacy is a “whole person in the landscape” perspective [5]. It acknowledges the centrality of the body as a source of information which evokes its own narrative and the role played by the communities of practice with which an individual interacts. According to Etienne Wenger, communities of practice are constituted through a shared discourse about the meaning of practice, enterprise, identity, mutual engagement, the sharing of artefacts and narratives and a “rapid flow” of information between members [6, p. 125]. A wholistic approach to information literacy recognizes that an outcome of becoming information literate within a landscape is the transformation of the individual from “unknowing” to
“knowing” that landscape, or from novice to expert. It recognizes that this does not happen in isolation, but occurs through the networks, connections and actions that exist between people working in consort.

The process of becoming information literate about a specific context, in this case a workplace, is viewed as culturally motivated. It is facilitated through access to knowledge situated in an information landscape that characterizes the discourse, and through the discursive practices of a community with a vested interest in ensuring the transition of novices from individual workplace subjectivity to collective workplace intersubjectivity. This relationship with information, over time, renders the novice embodied as a professional practitioner. The process of becoming information literate is complex and requires engagement with a range of physical, social and textual sources, recognized and sanctioned as legitimate by experienced practitioners. The experience of becoming information literate in workplace environments is not benign, as has been suggested. Access to information can be a contested practice, especially for those not yet legitimized by the workplace culture, who may discover that the reality of experienced practice differs from the conceptual representation of practice.

**Epistemological foundations**

Discourse is defined as the social actions (including language) that characterize a context. Joyce Fletcher describes discourse as a “social arena in which common
understandings are manifest in language, social practices and structure” [7, p. 143]. There are many discourses that influence and affect our social relations and structure our subjectivity and intersubjectivity, e.g. how we relate to everyday life, our workplaces, or our relationships in family or academic life. Through our experience of discourse we learn to attend to the world. Mats Alvesson claims that “As a person learns to speak these discourses, they more properly speak him or her, in that available discourses position the person in the world in a particular way, prior to the individual having any sense of choice” [8, p. 49].

Discursive practices refer to the practices that are constituted and sanctioned according to the social, historical, economic or political rules that constitute ordered activity within time and space. Discursive practices organize, structure and control the reproduction of social systems. Foucault writes “In every society the production of discourse is controlled, organized, redistributed by a certain number of procedures whose role is to ward off its powers and dangers, to gain mastery over its chance events, to evade its materiality [9, p. 49].

For this study, the transition from an individual institutional construct of practice towards a collective construct of practice and profession was interpreted by weaving together constructivism (the development of personal constructs) and constructionism (the creation of intersubjective meaning), also known as social constructivism, through the interaction of working in consort with others [10]. The study also connects this research to the concepts of discourse and subjectivity that frame post-structural approaches, in which meaning is always “historically or
socially specific” [11, p. 102] and located and produced within an institutional framework that “defines difference and shapes the material world” [11, p. 13].

Despite the variation in approaches within the constructivist paradigm, the fundamental assumption made by all constructivists and constructionists is that meaning and knowledge is constructed through engagement and activity of the actor with the world: “To see that all knowledge is a construction and that truth is a matter of the context in which it is embedded is to greatly expand the possibilities of how to think about anything, even those things we consider to be the most elementary and obvious” [12, p. 138]. The point of departure within the constructivist paradigm is the nature and outcome of activity. Constructivists focus on the individual, whereas social constructionists attend to the meaning-creation of collectives. In my research it became important to delineate the two positions, in order to illustrate the transition from an institutional view, where meaning–making relates to the individual assembling a subjective construct that influences practice, towards a collectively shared construction of practice.

The firefighter study

Firefighters who are permanently stationed in two large regional fire stations in New South Wales, Australia, participated in this study. The study differed from other empirically based information literacy research because it ventured away from the educational sector and the work of tertiary-trained professionals [13, 14]. In Australia firefighters are required to undertake 16 weeks of training through the
New South Wales Fire Brigades’ training college. Once they have completed this training they are assigned to their fire stations and their formal training continues via distance learning through the TAFE NSW’s (Technical and Further Education) Open Training and Education Network (OTEN). However, a large component of their training is also conducted informally at their fire stations by experienced officers and through their everyday experience of firefighting.

Firefighting platoons are hierarchically structured units and usually comprise four or five firefighters of different ranks. The platoon is led by a station officer, who is supported by a senior officer; the rest are firefighters with varying levels of experience, including novices. The platoon works as a unit and is rostered to work day shifts, followed by night shifts. This unit remains stable. Members can stay together on the same shifts for a number of years, and, consequently, firefighters develop deep and complex relationships. As they live, eat, sleep and work together, the relationship that develops is not unlike a family relationship. All participants of this study were male.

**Methodology**

A constructivist grounded theory method, evolved from the work of Charmaz [15], was used to analyze data gathered from semi-structured interviews. Symbolic interactionist and constructionist thinking influenced the analysis. Twenty interviews were conducted in two phases. Fourteen firefighters in three platoons and two additional firefighters who were seconded to the platoons were
interviewed in phase one. Seven of the cohort were experienced firefighters and seven were novices. Six firefighters were interviewed in phase two to elaborate on the themes and perspectives that emerged in the first phase. These six firefighters also consented to act as informants throughout the study and were involved in lengthy group discussions about the process of the analysis and writing up of the final thesis. As well as conducting the interviews, I spent considerable time visiting the fire station when the platoons were on shift to observe training and daily platoon life.

Interviews focused on how probationer and experienced firefighters learned to navigate the information landscape as they learned about the workplace and workplace practices. Participants were asked to describe the information they felt was important to their practice and how they located it. Experts and novices were asked to describe the differences between expert and probationer use of information.

Constructivist-influenced grounded theory method acknowledges the multiple realities of everyday life and focuses on the negotiation of meaning between the participants of the study and the researcher. The research took as its starting point Gregory Bateson’s definition of information as “any difference which makes a difference” [16, p. 459]. This meant that I adopted a wholistic, or whole-person-in-the-world approach to exploring the information landscape of firefighters. This approach focused not only on the overt “acts and facts” [15, p. 275], but also on the participants’ beliefs, values and ideologies, and on situations
from which information could be gained, used, or disseminated to others. The underlying concern in this research was to ensure that the analysis as rendered was recognizable and relevant to the participants of the study, and reflected their experiences with information. In this paper, I have taken quotes directly from the analysis and used them to illustrate and represent common perceptions. In this way, the study can be seen to be concerned with representing a view of a lived-world which is localized and particular in time and space.

**Seeking and accessing information in the firefighting landscape**

The discourse of firefighting frames an information landscape within which firefighters need to interact in order to seek, draw and use information to learn about practice and profession. The landscape that emerged during the study was constituted through three modalities characterized by different information seeking and use strategies and by the social actions of those who influence, mediate and interpret the information environment on behalf of novices. While the sites are listed separately in this paper, their interconnectedness is emphasized. Each is supported by practices that afford and facilitate seeking and accessing information from the discourse. Figure 1 illustrates the emerging model of information literacy that will be described.
**Textual sites**

This formal site of codified knowledge comprises technical and training manuals, administrative documents, policies, procedures, and formal statements relating to work and work practice and represents the institutional discourse of professional firefighting. The institutional discourse has historical, social and political precedence and reveals established power structures, hierarchies and standards for performance and professional conduct. Information is sought within this modality through print or digital sources.

**Learning to act: the formation of individual workplace subjectivity**

For probationary firefighters, initial engagement with textual information facilitates the development of individual workplace subjectivity in relation to the institutional requirements for practice and profession (learning to *act as a firefighter*). It does this by connecting the probationer to institutionally sanctioned statements about practice, the procedures of work and the professional conduct of firefighters that will allow them to remain safe during their training and probationer periods. A probationer, when questioned about the role that conceptual information plays in becoming a firefighter, stated that “*you learn to act, because you know what the rules are*”.

Established constructs of safety, safe working practice, community and professionalism dominate the institutional discourse and can only be known
conceptually because this information has not been actioned by the body in everyday practice or sanctioned as appropriate or valuable by experts within the community of practice because it “is detached from practice or obscures the intricacies of that practice” [18, p. 40]. As one firefighter stated “you know all the tactics but you still don’t know the job.” Experienced practitioners often contest the institutional training of novices as not providing them with the information they need for actual practice -- a common theme articulated by a senior firefighter: “It doesn’t apply to what we actually do. A lot of the guys are learning how to speak in public or write essays, but they are not actually learning our core business, which is putting out the red stuff”.

**Seeking information through text**

Connection to the formal statements of work and work practices is facilitated by access to information in the form of facts, propositions or concepts: the “know why” of knowledge [19, p. xiv]. This type of information is rarely questioned by probationer firefighters during their training. They view it as “gospel” because it is institutionally sanctioned through rules, regulations and standards of conduct. Firefighters understood information seeking within this modality as a systematic set of rules which enables access to information. When questioned about finding information from text, a senior firefighter articulated a common understanding: “it’s indexed, categorized, you look at the contents pages”.

Connecting to textual information assists the newcomer construct a sense of individual subjectivity, a sense of self and an understanding of their
relationship to the formal organization and agreed work practices. In effect the individual becomes a product of the institutional discourse, and is recognized as a legitimate member of the wider workplace community.

Corporeal sites: developing fire sense

Information from the corporeal modality is highly valued by experienced practitioners who recognize that “you can’t develop fire sense just by reading about it”. Information seeking in this context may be deliberate or incidental and focuses on accessing information through observation of the body in actual practice, in rehearsal, or through narrative. Such situated embodied knowledge is tacit and difficult to articulate or reproduce in textual form. According to David Beckett and Gayle Morris [20, p. 47] “bodies are not simply subject to external agency, but are simultaneously agents in their own social construction of the world”. In the context of firefighting, the body is used as source of sensory information, which enables the development of fire sense. The body becomes a communicator of practice and a symbol of community and professionalism that reflects the discourse in which the body is situated socially, politically and historically.

Firefighters recognize fire sense is constructed through bodily experiences on the “fire ground” (the site of a fire) and reinforced through the community of practice. A similar use of physical information has been identified among miners by Beverly Sauer [21] and Margaret Somerville [22]. Sauer’s research identified
that miners developed pit sense through sensory information that could not be articulated through text. Somerville [22] found that miners acquired pit sense through embodied learning and that embodied knowledge is valued more than “paper knowledge” which is “not evolved from the complex interactions of the mine worker’s body with the place of work” [22, p. 26].

A firefighter with 25 years experience described how engaging with physical information enables firefighters to imbue their bodies with information critical for safety in dangerous situations: “Your senses are working overtime, you don’t say, hey, that’s loud, you say, hey, there’s a warning sound...You hear those sounds and you’re alerted to it. I don’t think you hear a sound and think, hey, that’s falling masonry, you think that’s the sound of danger, stay away from it.”

Another firefighter spoke of the way the body actively seeks information

When you go to a rescue you use your eyes. You see everything as you’re approaching it, that’s when you start taking information in... It’s the same with fire and rescue you know... you’re looking at where the power lines are down, different hazards... you’re looking who’s in the car, is there fuel coming from the car, is there a likelihood of fire, are there children in the back. That’s a very visual sort of thing because you don’t have a cloud of smoke, so it’s visual and then it’s hands on.

Seeking information from physical sites is critical for the construction of meaningful practice. It corresponds to Merleau-Ponty’s account of the “lived body” as the centre and symbol of learning and experience [23]. For Merleau-
Ponty, bodies become storehouses of information and understandings that find a commonality of shared meanings within a culture. Intersubjective meaning is created through the perception of commonality, which suggests that embodiment is culturally produced. Seeking information from this site requires observation, rehearsal, reflection and the experience of authentic practice.

The role of the body in social interaction has been accorded importance in the work of Erving Goffman [24]. The body plays a central role in the generation of meaning by providing visual clues about roles and practices, which lead to the establishment of shared vocabularies and meanings that facilitate embodied knowing. This was highlighted in the study by the experienced platoon members’ observations of the novice body in rehearsal and in actual practice, which provided visual clues about information gaps that might compromise platoon safety. Information seeking as an incidental activity was also evident in the novices’ observation of the bodies of experienced practitioners. Novices used this practice as a way of accessing embodied information to enhance their own practices. Training nights and scenario training played a significant role in facilitating information seeking about embodied practice. These regular activities allowed experienced practitioners to act as information sources through demonstration of work practices.

*Seeking “bodily” information*
Seeking and drawing information from the body through observation and practice organizes the mind when it is coupled with formally articulated rules and codes of practice. A new recruit articulated the difference between theoretical understandings and actual practice:

*There’s theory and then there’s real practice. Theory as in the training may involve practical demonstrations and exercises, but it’s all theory training. Practical is on the fire ground. I think experiencing, and seeing and training with the others gives blokes an idea of what to expect ...*

This is further emphasized in a comment from a station officer who spoke about moving from the artificial construct of practice, created by engaging with textual information, to the world of embodied practice:

*That’s when the rubber hits the road. There’s only so much you can do at the training college, you can’t simulate it, well you can to a certain degree, but it’s different when it’s in a controlled environment like that. When you’ve got the real thing and you’re dealing with people whose houses are burning down and who are hysterical ... you can’t train for that. You have to learn that component when you are on the job. I suppose it’s like training as a doctor, when they go to a hospital sooner or later they’re going to get a real patient.*

Through connecting the experiences of the body with textual practice, the body becomes “named” as a firefighting body and is legitimized by others as a source of valued information. Because of their embodied experiences, experienced
practitioners are able to physically “speak fires” through actions when describing a fire or firefighting incident. Novices who had less bodily experience remained silent.

**Social sites: engaging with intersubjective meanings**

Seeking information from the social domain is central to the construction of professional practice and knowledge, which is critical to community membership and identity. In the platoons studied, social information is used to validate actions, values, beliefs and emotions of the community against the overall sociocultural discourses about practice and profession. Information sought by novices and afforded by the community of practice renders the individual as an intersubjectively embodied member of the community.

From this site, experts reposition novices away from the institutional view of practice into the culture of the firefighting profession. A firefighter who had been deployed at a fire station for three years reflected on this repositioning:

*The fire brigades didn’t teach me a great deal, and it’s generally not the fire brigade that does teach, it’s the firemen at the station. They (the fire brigade) give you enough confidence ... In the college it’s all controlled environment and you know there is only such much you can learn, so much information you can get by burning bales of straw.*

Probationary firefighters are able to engage with the story lines of the wider profession and the community of practice. Through the discursive practices of the
community, the novice is repositioned towards the collective or intersubjective view of the community of practice. A commonly held view among experienced officers was the need to bring the novice in towards the community of practice: “you got to have a shared view, you’ve got to look for the same things”. Another officer suggested that “it’s important that everyone has the same focus”. This repositioning moves the novice from an independent subjective view of self in workplace practice to an intersubjectively shared understanding of meaningful collective practice.

Seeking social information

Information seeking within this site can be directed and purposeful, or incidental and informal. It relies on the development of social relationships between novices and experts. The importance of the collective in mediating information seeking practices and interpreting information for probationary firefighters lies in the ability of experienced firefighters to act as information sources and points of reference about profession, experienced practice, and the formal statements of work which dominate the institutional discourse.

In their transactions with novices, experts are able to mediate the information environment in order to inculcate the novice into the intersubjectively shared constructs of safety, profession and practice, thus positioning the novice within a intersubjectively shared construct, which is critical for groups who must support each other in risky or dangerous situations. Access to information is made
available to probationary firefighters through discursively constituted narratives of community history, deconstruction of critical incidents and events, mediation and affordance.

The social site is also a site where information seeking can become a contested practice. This can have consequences for the continued motivation, or demotivation, of probationers and of experienced practitioners who have disengaged from the platoon or community. The contested nature of the information environment is demonstrated in the relationship between permanent firefighters and retained firefighters. Retained firefighters are employed on a casual basis to support permanents. For them firefighting is a second job. This places them outside the culture of permanent firefighters who see themselves as the paid professionals. Their position can result in limitation of access to information from the sites that characterize the profession.

**Affording and contesting information practices**

Experienced firefighters exercise a powerful role in the novice’s transition from acting as a firefighter to being a firefighter. Power is enacted through the discursive practices of the collective who mediate novices’ information environment by affording them opportunities to seek information and by guiding their access to social, physical, and textual sites of information. Robert Prus argues that power is not an “objective phenomenon” but a “social, meaningful enacted essence” [25, p. 272]. Within the platoon, other firefighters become social
objects, and novices develop a line of action towards them as trustworthy sources of information.

Platoons are stratified by established lines of power formalized through the discursive statements and practices of the discourse, and socially realized by the community of practice. The platoon is not an arbitrary structure. Its construction recognizes expertise. At the top of this structure are those with the most knowledge of practice – experienced station officers – who act as sites of embodied knowledge. Those with the least information – probationary firefighters – must learn to access these sites. Even though a formal structure exists and is acknowledged by all members of the information community as the “chain of command”, the need to rely on each other in times of risk and danger, or uncertainty ensures that the “platoon-as-family” works in consort.

The enacting of power can be viewed as a positive force ensuring mutual inclusiveness in action and reaction, thus ensuring safety for the novice and the platoon. Storytelling, deconstruction of critical incidents and everyday events, guidance, demonstration and instruction provide awareness-raising opportunities. Affordance of such opportunities helps position and embed probationers into the intersubjectively shared constructs of the community of practice.

On the other hand, the enacting of power can be viewed less positively. The contestation of information restricts the ability of a member of the collective to interact with information through the objects, symbols, events and actions of others. This is most evident in the case of retained firefighters who remain outside
the culture of permanent firefighters, and in the case of firefighters who have disengaged from the discourse and the platoon by withdrawing from continued development of collective competence.

**Inscribing discourse: coupling information through discursive practices**

The transition from novice to expert is enabled by the *coupling* of information from the different sites, which inscribes professional identity and practice onto the body of the probationer. The process is incremental and cyclical; it is facilitated by reflection, evaluation and thinking critically about each source of information and its relationship to what has been learned.

Community discourse is inscribed through socially mediated interactions and practices of experienced practitioners and through the physical actions of the firefighting probationer learning to act as part of the firefighting community. The community of practice presents a grounded discourse, which represents the values, beliefs and attitudes that have been constructed through embodied and social practice.

The community may present a version of professional practice that challenges the institutional discourse, because information is drawn from experiences of experts in everyday workplace situations. These experts direct the information seeking of novices towards collective understandings of practice and professional identity. This information, accessed from the textual sites, bodily
experience of authentic practice and from social sites, is drawn together and sets the recruit “in place”.

Coupling of information makes the novice more aware of where information is situated, and of the strategies to extract it. Initially, coupling occurs as the novice synthesizes information through their engagement with text. Through engagement with the sanctioned rules and regulations which give professional firefighting its public face, novices are embedded within the institutionally recognized construct and are positioned to act as firefighters.

Through the actions of the rehearsed body, predictable information becomes coupled with authentic practices accessed during weekly drills and scenario training, where potential hazards or dangers are known to exist. These offer experienced practitioners the opportunity to demonstrate the body in action, to mediate information access, and to engage the emerging practitioner with the tacit domain of experiential knowledge. This was recognized by probationary firefighters: “It’s just a matter of applying it in the real world that you need a bit of guidance with.” Through coupling of mind, body and experience, the institutional knower is positioned by the mediations and affordances of the community and by his or her own actions in practice, and becomes an embodied knower.

The inclusion of embodied information rests in domain of “know how” or procedural knowledge, as Ryle [26] and Billett [19], among others, have written. The coupling with action through practice brings meaning to abstract conceptual
information represented in texts. Sauer’s research into embodied knowledge and the development of pit sense among miners has questioned the extent to which written text reflected “a knower’s embodied understanding of the material world” [21, p. 132].

The construction of embodied knowledge is underpinned by the ability to engage with, and critically reflect upon, information from the institutional, social and physical contexts of firefighting. The ability to engage with information through critical reflection and evaluation marks the transition from novice to expert. In this respect, becoming information literate is critical to the process of learning, as relevant and contextual information accessed through information work and influenced by others as information sources act as the building block for the construction of knowledge about firefighting as profession and practice. Information accessed through sensory, experiential, or social domains is unpredictable until experienced. Access to this information does not follow traditional information seeking processes, but can be recursive, serendipitous, or purposeful.

**From acting to being: the transition from institutional to collective constructs**

Coupling is attended to through information work of novices (learning how to seek and access information) and influence work of experts (affording, mediating and interpreting the information landscape). The process of coupling requires
engagement with both institutional and collective discourse and therefore is constituted through both the development of personal constructs (constructivism) and the creation of intersubjective meaning (constructionism).

**Engaging with the institutional discourse**

Knowing is not a passive accomplishment or action [27], it requires active relationship with the symbols and participation in the practices that form the landscape. This, in turn, implies active engagement with information through the symbols, objects and events of the discourse. Firefighters’ initial engagement with the discourse at the Brigades’ Training College occurs at an abstract or received level, primarily because of the predictable, safe nature of training. Engagement with explicit and external information focuses on knowing about the formal statements of the workplace, and the basic procedures and practices of firefighting that will keep the probationary firefighter safe. The outcome of training is to lead the novice towards a construction of “self” as firefighter, within the context of safe working practices.

Through practices and procedures, the institutional framework controls, selects and organizes information in ways that are meaningful to the context [9, p. 51]. Working with information at the institutional level leads to a personal view of the construct of safety and the practices, procedures and relationships that ensure and give meaning to the concept of safety. This occurs against a backdrop of historical and sociocultural influences and tensions, which guide the personal
construction of *acting as a firefighter*. As Schwandt claims: “We do not construct our interpretations in isolation, but against a backdrop of shared understanding, practices, language” [27, p. 305].

Firefighters value information from the institutional and collective discourse. However, they also make clear distinctions between knowing about practice at an institutional level and being repositioned, with the assistance of others, into the collective construct where accessing, interpreting and understanding information in agreed ways becomes critical to team safety. The transformation from learning the construct, created at an institutional level, to being in the construct is best informed through attending to the claims of intersubjective accomplishment, made through constructionism.

*Engaging with the collective discourse*

Constructionism espouses the view that reality is influenced by the everyday interaction of individuals with their environment, society and culture [28]. By engaging with an information landscape and interacting with others who claim ownership of that landscape, novices develop a view of reality that is meaningful and is recognized as such by others within the environment:

All knowledge, and therefore all meaningful reality as such, is contingent upon human practices, being constructed in and out of interaction between human beings and their world, and developed and transmitted within an essential social context [10, p. 42].

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When probationary firefighters enter the fire station, they enter a world already constructed and agreed upon by others. This world has, over time, developed historical, social and political structures and meanings that constitute and characterize the discourse and discursive practices. Platoon knowledge reflects the connection between the institutional construct, the central construct of safety, and the unique character of each platoon. It is the sum of the experiences and values about practice and profession that represent an agreed way of knowing within the collective [12].

Novices redefine the subjective meanings created within the institutional setting of the training centre by attending to the intersubjective meaning of workplace and professional practice as it is recognized by the platoon. As Gergen suggests, “individuals mentally construct the world, but they do so largely with categories supplied by social relationships” [29, p. 237].

In mediating probationary firefighters’ engagement with the information that characterizes the discourse, experienced firefighters attend to the development of intersubjective meaning. In Stephen Billett’s words: “Sociocultural constructivism contends that knowledge is sourced through individuals’ interaction with a socially determined world in the forms of its culture, communities, and practices” [30, p. 21].

Therefore, it becomes a significant role of the collective to position the novice into the practices and conversations of the workplace by influencing the way in which information is accessed and understood. Positioning occurs through
influence work and connects the novice with the information that constitutes the intersubjectively shared constructions of workplace meaning and knowledge. The emphasis of constructionism is the “collective generation of meaning as shaped by the conventions of languages and other social processes” [31, p.127]. In this respect, a wider role for information literacy can be effected. What is shared is information. How it is accessed and shared, and how it is made sense of, depends on the collective actions, mediations and affordances of the platoon.

**Conclusion**

The discourse of firefighting is rendered through the fundamental construct of safety. The discourse is maintained through access to information about the rules and procedures that inscribe on the novice an individual workplace subjectivity that enables them to learn to act and keep safe while in training. When they are assigned to a platoon, novices must learn to engage with information that is valued by the platoon and, in effect, reinvent themselves as part of their team. The collective discourse is constituted by a number of complex story lines about *self* in relation to the institutional discourse, the firefighting platoon-as-family, practice and profession. These story lines are woven together to form a cohesive view of what it means to be a professional firefighter.

The transformation of professional firefighters from novice to experienced practitioner requires a shift from an individual subjective view of practice to a collective and intersubjective view of practice. This shift is facilitated through
information literacy practices which connect the individual to sources of conceptual and embodied information which constitute the knowledge domain of firefighting.

Firefighters learn initially through external sources of information such as codified knowledge that is accessed through print and digital sources. Access to sites of codified knowledge provide probationary firefighters with “know-why”, and enables them to learn to act as a firefighter. It is not until they access complex embodied information located within the community of practice and through situated and experiential knowledge of the body that they become firefighters, with a full knowledge of firefighter practice which shapes their professional identity. This transition is effected by engagement with, and experience of, information from the modalities identified in this article:

- textual sources, which act as a site of conceptual knowledge;
- physical sources, which act as a site of embodied knowledge; and
- social sources, which act as a site of community knowledge.

Information from these three sites contributes to the situated knowledge through which the discourse of firefighting profession and practice is rendered.

Becoming information literate is the process of knowing and becoming embodied within the specific discourses that characterize context. The process is facilitated by the discursive practices of the experienced members of the community of practice, who have a vested interest in ensuring that newcomers
come to develop an understanding and meaning about practice in similar ways. Discursive practices facilitate newcomers’ passage into the discourse of the community of practice. These practices ensure that novices have access to the textual, social and physical information which will inform practice and shape the development of their professional identity.

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