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**Information Literacy Needs Of Local Staff
in Cross-cultural Development Projects**

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Abstract

Information literacy is about people's information practices in their ICT environment. Increasing access to ICTs to bridge the digital divide has implications for the information literacy needs of people in developing communities. The research described in this paper, investigated development workers' perceptions of information literacy needs amongst local staff participating in community development projects in cross-cultural situations. A phenomenographic approach was used to elicit five hierarchically related, qualitatively different understandings of information literacy needs within the development context. The results reveal possible directions for those workers involved in bringing ICTs into workplace settings within developing communities.

1. Introduction

Investment in Information and Communication Technologies (ICTs) in developing countries is presented in much of the development literature as a major means of achieving development goals (e.g. Mansell and Wehn, 1998; UNDP, 1998). The 'Digital Divide' is a term used increasingly to represent the inequity in access to ICTs between developed and developing communities and nations. National governments, the media, and various major development organisations or donor agencies, such as the UNDP, have a tendency to emphasise the importance of increased access to ICTs, rather than the relevant skills necessary to effectively utilise ICTs, in order to address the digital divide. These stakeholders assert that ICTs can have a leveling effect, giving poor communities access to markets, information, and other resources otherwise inaccessible (Goldstein and O'Connor, 2000). The digital divide is thus touted by some as the major barrier to be overcome in order to enable developing nations to progress. In essence, ICTs appear to have become almost "an icon for modern development, turning use of ICTs within development into an end in itself rather than a means of achieving other development goals" (Heeks, 1999).

The idea that increased access to technologies will serve to bridge the Divide has resulted in a relatively limited emphasis on the challenges faced by individuals and communities when introduced to ICTs. As Carvin (2000) states eloquently: "Access, access, access will not solve the digital divide". Perhaps more is needed than technology itself to bring about improvements in overall development objectives and the way ICTs are utilised to achieve them.

Attending to information literacy needs and facilitating effective information practices would seem to be a critical component of any development strategy which involves the use of ICTs. The term ‘information literacy’ refers to how people connect with the world of information, interact with the world of information, and utilise the world of information (Todd, 1999). This paper recognises the importance of improved “access to, and effective use of, knowledge and information” (GKP, 2000) in the goals of sustainable development. It focuses on those needs that must be addressed when seeking to enhance the effective use of information in a context where people in developing communities are introduced to a workplace which is characterised by a higher level of ICT use than has necessarily been previously experienced.

In this paper we report an exploratory investigation of development workers’ perceptions of information literacy needs amongst local staff participating in development projects in a cross-cultural context. The investigation examined the information literacy needs of local workers as perceived by western staff participating in the projects. Information literacy is, therefore, examined in relation to how western development project workers “...experience, conceptualise, perceive and understand various aspects of...” (Marton, 1988) the information literacy needs of the people with whom they work in development projects. The resultant model reveals development workers’ perceptions of individuals and communities when introduced to ICTs. Several implications are discussed in relation to management of projects, staff development and training, and the development of culturally appropriate information systems and structures.

2. Investigating perceived information literacy needs of local workers

The research question adopted for this study may be stated as follows: What significant differences in perceptions of local workers' information literacy needs exist amongst western development workers? The interest in variation suggested phenomenography as the most appropriate research approach (Marton, 1986; Marton and Booth, 1997; Bowden and Walsh, 2000). Phenomenography has also been successfully used in previous investigations of information literacy (Bruce, 1997; Bruce and Candy, 2000). Phenomenography is a research approach that seeks to describe phenomena in the world as others see them, the object of the research being *variation* in ways of experiencing the phenomenon of interest (Marton and Booth, 1997, p. 111). A fundamental assumption underlying phenomenographic research is that there are a finite number of qualitatively different understandings of a particular phenomenon. In this research the phenomenon we are exploring is the information literacy needs of local workers in development projects (as understood by the western development workers). The descriptions of these various understandings form the description of the phenomenon under investigation. This is because the phenomenon is understood to be represented by the combination of the different ways in which people experience or relate to some aspect of the world (Marton, 2000). Different relations between people and the world are referred to as conceptions.

The particular descriptive focus inherent in phenomenography has produced two distinct presentational outcomes of any phenomenographic study: Categories of description, and Outcome spaces. Categories of description are the 'tools' used to represent the conceptions that are derived from the data collection process. Each

category highlights the critical difference in meaning and structure between conceptions. The internal structure of a conception sheds light on its meaning, by showing how that meaning is constituted through a particular arrangement of parts of the conception. The outcome space is a diagrammatic representation of the logical relationships between conceptions as described in the categories of description. In this study, the outcome space essentially forms a map of the different ways in which information literacy needs are seen to be experienced by local workers, and how these conceptions relate to each other.

3. Participants

Five development workers participated in this study. Participants were selected because of their experience in working in a development context either locally (in a cross-cultural context) or internationally. A brief description of each follows:

Participant 1: Male. Interview predominantly related to experiences in setting up community housing projects in Aboriginal communities in Northern Territory, Australia. These projects mainly involve establishing and working with office systems.

Participant 2: Male. Interview related to experiences in managing Aboriginal housing projects in Northern Territory, Australia. These projects mainly involve office systems.

Participant 3: Male. Interview related to experiences as an emergency relief worker in East Timor. He worked with local people in delivering emergency relief, including local coordinating staff and local villagers.

Participant 4: Male. Interview related to experiences working as a member of a design team for a rural development project in East Timor. The project involved interaction with local people, including government officials, private enterprise, and local villagers. He also referred to experiences as a consultant for development projects in China, and Australian Aboriginal communities.

Participant 5: Female. Interview primarily referred to experiences working as a community development worker in Aboriginal communities in Far North Queensland, Australia. Office-based work was a major component of the projects to which she referred.

Although the number of participants was relatively small, each interview involved an hour or more of in-depth conversation. The transcripts yielded an extensive databank of thinking and ideas relevant to the research interest. For the purposes of this exploratory study the data gathered was sufficiently rich to reveal qualitative variation in perceptions, and to permit an analysis of both the meaning and structural components of the different categories or conceptions.

4. Interview

In order to elicit perceptions of information literacy needs, semi-structured, in-depth interviews were conducted and transcribed. The focus of the interview questions was not specifically based on ICTs, but on the experiences of the individuals in their various workplace settings. The questions, in accordance with the phenomenographic approach, were worded in such a way that they were open enough to "...allow the

subjects to express their own way of structuring the aspects of reality they are relating to” (Johansson *et al.*, 1985, p. 252). A series of set questions was asked in each interview, with additional, probing questions included to further ensure the interviewer understood the intention behind the responses of each participant.

Interviews focussed on the respondents’ experiences and understandings with a range of questions including: How do the local staff use information in their daily life at work? Describe the way you see information literacy needs of local workers in the development projects like those you’ve been working in. How do you see the information literacy needs of the non-western people working in cross-cultural projects?

5. The varying conceptions of information literacy needs

5.1 Categories of Description

Five conceptions of information literacy needs were established. These are represented in the categories of description below. The core meaning or referential aspect of each conception is represented by the white centre of each category’s diagrammatic representation. The outer circle represents the most significant structural aspect within the category. The relationship between each separate conception is represented in the outcome space discussed below.

Category 1: Basic Literacy Skills

At the core of this conception of information literacy needs is the need for basic literacy skills. These skills are required in order to function in the most basic way

within the dominant system. The ability to compete or ‘play the game’ in the dominant system is represented in the graphic by the dashed-line border. It is a pervasive element in the structure of each conception and is ‘in the background’ (i.e. focal in awareness, but with varying levels of significance) for each category of description including this simple one of literacy skills (see Figure 1).

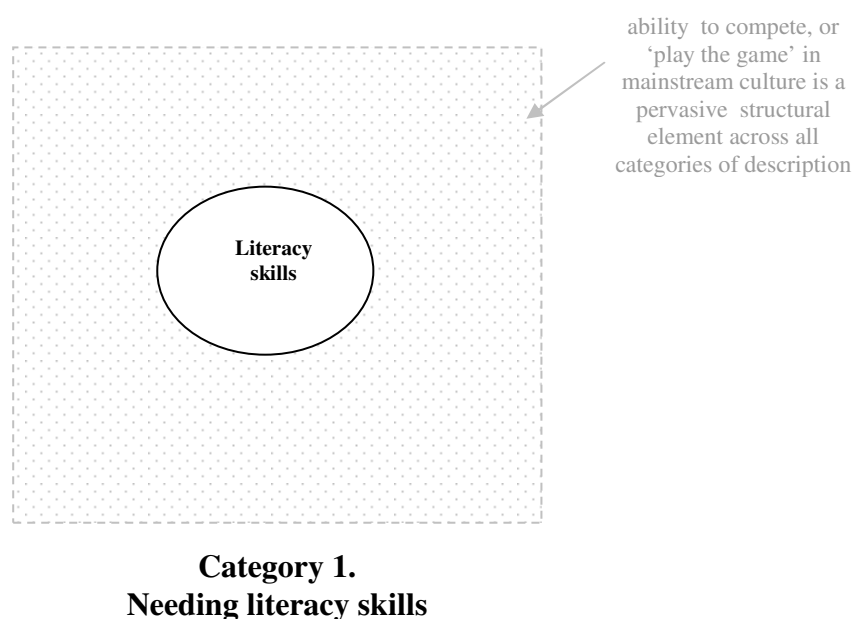
The ability to understand English (or the language of the project provider) is important. Reading and numeracy is also described as necessary in certain contexts. Addressing these basic literacy needs will lead to the capacity to address other information literacy needs.

“...so they presume that they can read stuff that other people can...” (Participant 5)

“and then information literacy regarding mathematical thinking as in the costs of getting things done, and mathematical concepts regarding how many people live there, how many in each bedroom” (P1)

“...I suppose the ability to speak English... and at which stage they’d be able to work higher up in the organisation...” (P1)

Figure 1



Category 2: Understanding Workplace systems

Information literacy needs in this category are understood to be the need to understand the workplace systems in which the local worker – at any level – is working.

The specific aspects of the workplace system needing to be understood are context dependent – i.e. it depends on the type of workplace. In addition to the basic literacy skills in category 1, is the additional need to use – or learn how to use ICTs (such as computers, faxes, phones, email). Other structures or systems associated with working in an office environment, or a new work environment, are also necessary at this level of information literacy needs (see Figure 2).

“...we had developed forms, so that when people came in and said “what’s the problem” , the Aboriginal lady working in the housing office ... was able to use the form to record the house, record the problem, record the date... pass that on to the maintenance crew, and then file a duplicate of that file OR enter the details into the computer...”(P1)

“...she’s been able to deal with that through phone and email and she’s pretty good on that”(P5)

“...it took probably 20 hours for this woman to get control of her mouse.... and then the concept about how it all worked was ... beyond her...”(P1)

The cultural experience of the local worker is also focal in the participants’ awareness. It is acknowledged that the cultural differences will impact on the workers’ capacity to adjust to, and understand, the new system in which they are involved. In many instances, the concepts of the office environment, for example, and its associated systems might be a foreign concept.

“...I think that the concept of teaching a manager in a developing country community all that you teach a western person with an MBA or something like that ... is profoundly difficult because in a western country we have grown up with this culture and we understand the concepts ... that we’re presented with as managers with an MBA ...

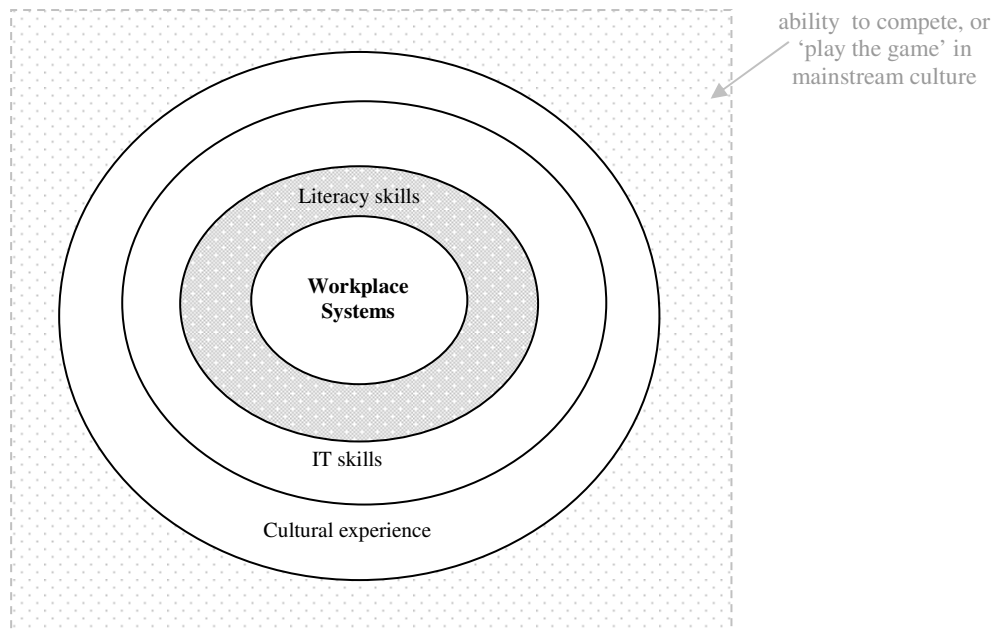
whereas all the concepts and ways of doing things, and reasons for doing things are likely to be foreign to a manager in a community” (P3)

“.. we put people into positions for a whole range of other reasons... and then expect them to know all this stuff as well – and they don’t..Often they’re brought in for their expertise or their local knowledge.. they’re not brought in because they have a degree in IT or something” (P5)

“...because people in the mainstream community, have grown up, and always been a part of that system to one degree or another.... a lot of the assumptions and values are already their assumptions and values, so without even thinking about it they ... have a lot of that literacy... whereas people in other communities who are culturally different have got a different set of assumptions and values, and need to be familiar with what’s going on...” (P2)

Again, as in Category 1, the ability of the local worker to compete in the dominant system continues to be within the awareness structure of the conception.

Figure 2



**Category 2.
Needing an understanding of workplace systems**

Category 3: Communication skills

At the core of this conception of information literacy needs, and building on the basic literacy skills and understanding of workplace systems, is the need for the local workers to develop communication skills. These communication skills relate to the ability to communicate with other members of the project team, and to communicate the goals or processes of the project to other members of the local community.

A key focal awareness in this conception is the necessity for the worker to be a ‘translator’ between the two different cultures – the dominant and the local. The cultural experience and values of the subject are again relevant as these experiences and values will influence the interpretation and communication process (see Figure 3).

“..... and so her job now is to do some of that translation for people who would probably not have the skill or ability to normally even interpret questions” (P5)

“...interpretation – the interface between the two cultures. All the interpretation stuff.. and ... core understandings in one culture and core attitudes and values which are very different...” (P1)

An understanding of, and an ability to use, their local cultural experience, such as local knowledge structures as a part of their communication processes is seen as an information literacy need for the local workers (and for the community in general).

“...well I think they need access and the ability to use information on their own country on their own culture ...” (P4)

Another structural aspect of this category is the notion of differing ways of presenting information in cross-cultural situations.

“... if you interpret literacy as people’s ability to understand stuff then we have to recognise the face-to-face verbal literacy, and y’know oral literacy as much as written literacy and I think that’s not a recognised thing either...” (P5)

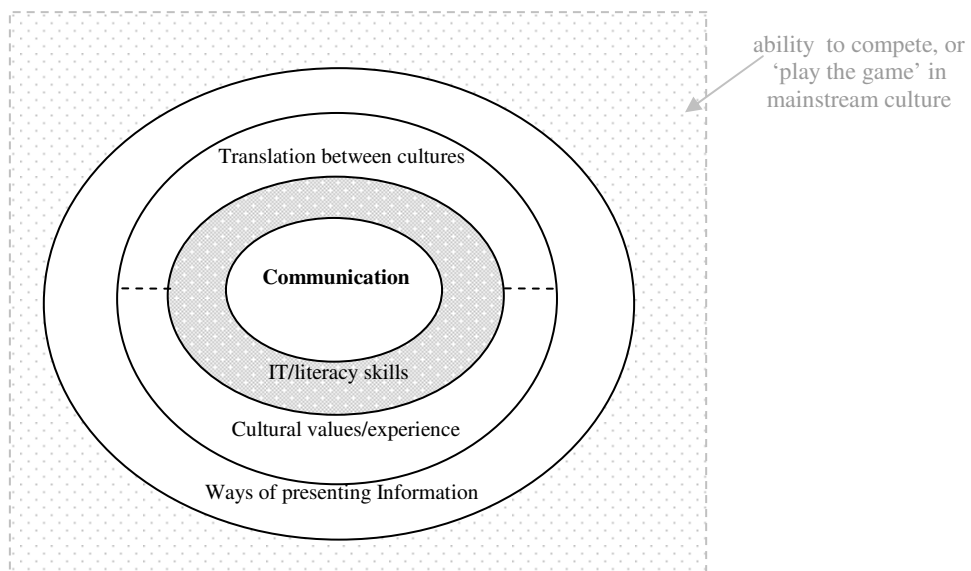
“...we’ve gone too much for what can be sent out efficiently and effectively.. to everybody.. and there’s no recognition that a lot of literacy is oral literacy – people need

to be spoken to – and say spoken stuff. If we don't do that then they don't have that comprehension” (P5)

“...the other one is the push .. the electronic communication... not necessarily a good idea for people who don't have the basic stuff..” (P5)

Effective communication skills in this cross-cultural context will, as in categories 1 and 2, assist with the capacity to compete in the dominant system.

Figure 3



**Category 3.
Needing communication skills**

Category 4: Accessing information sources

The core meaning of information literacy needs within this conception is for the local workers to be able to access information sources. The structural elements of the previous categories are evident in this conception. That is, literacy skills, IT skills, an understanding of workplace systems, communication skills and the ability to translate information in a cross-cultural environment, are essential to being able to access information (see Figure 4).

The relevance of the information to the local workers' community is a significant structural element. Combining the ability to translate across cultures, and present information in a culturally relevant way, will assist the local worker to access relevant information that might be used to address the needs of the local community.

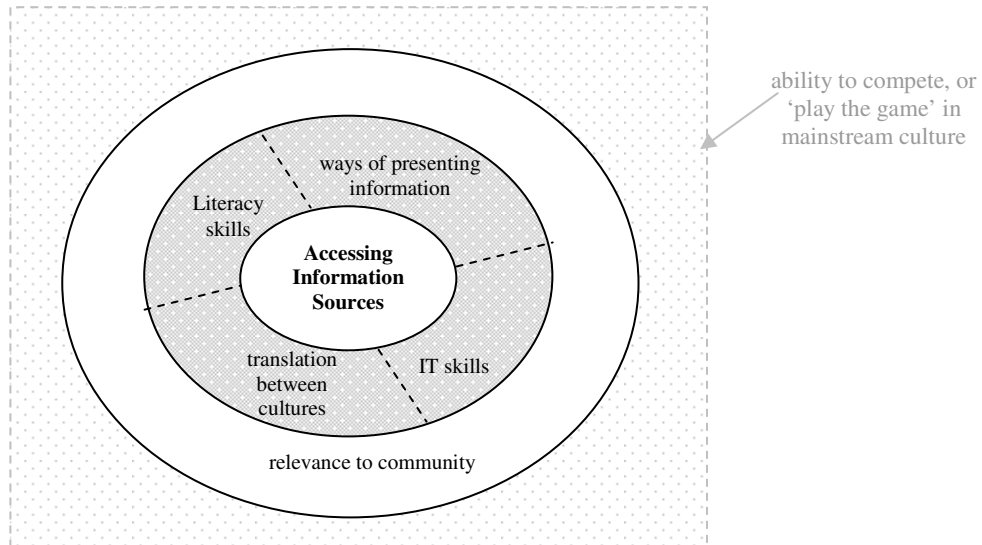
".. so if the information is matched to people's needs... responding to something like, they have an issue they are trying to deal with but they can't - they need someone to remove the obstacle" (P4)

".. and the process of sending people out huge amounts of information that isn't really relevant" (P5)

"..the information that they need access to... and the method of compiling that information and accessing other mainstream information – needs to be primarily culturally appropriate....." (P1)

Again, the ability to compete in the dominant system remains a background structural element of the conception.

Figure 4



**Category 4.
Needing access to information sources**

Category 5: Understanding the dominant society

For this conception information literacy needs are understood to be directly related to the ability to understand the dominant society. The ability to understand the dominant culture is inextricably linked with an understanding of the dominant cultural values and assumptions.

“.....people in other communities who are culturally different have got a different set of assumptions and values, and need to be familiar with what’s going on – or what’s being done to them....” (P2)

The core understanding is also linked with understanding of the dominant culture in which the project operates (i.e. of the funding provider). The dominant system has already been referred to in the context of the workplace system as in category 2. The

system element in this category expands beyond that to include the broad bureaucratic structure and global system (see Figure 5).

“... the more information that people have on the way the projects work and international aid funding works, the better because they will be able to work within the organisations...” (P3)

“... so as much information about why there is a project, where it came from, what some of the implications of it will be....” (P2)

“... understanding of the government system, so they know which government representatives deal with what issues, and ... how the government divides up how communities are administered, which government people work in what context, relate to what services ... and at another level, how governments operate, and how – at the next level- how communities operate – I mean, how the Australian country operates... and then the country in the global system, and I suppose then... what power they have to influence their destiny.....” (P1)

The ability to translate their understanding of the dominant system into their own community context remains central to this conception of information literacy needs of the local workers.

“... they know the issues and can speak eloquently on them.. but the problem is that the solution – or a lot of the solutions are not of their world.... There’s money.. ... or there’s ... government donor support or .. there’s all of these conditions that we put on them.. The bureaucracy... all the conditions that go with money round the world...”. (P4)

“... the differences in underlying values and understandings and interpretations of the world I think really impact on information literacy needs.” (P1)

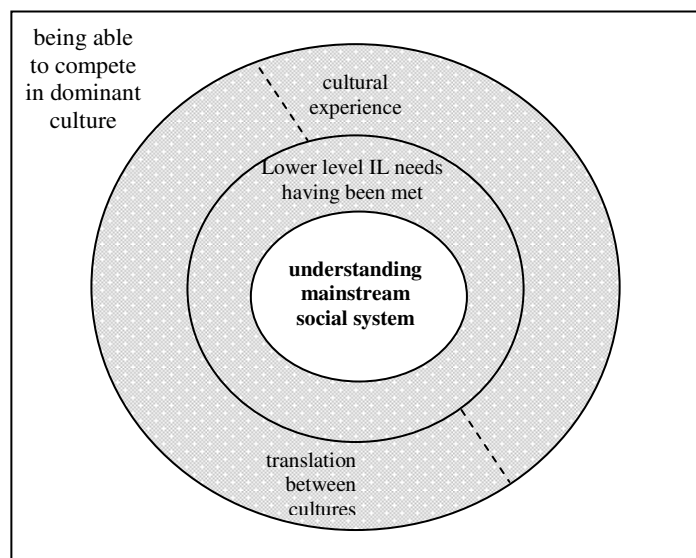
The local workers’ own cultural experience plays a role in their ability to translate the current situation - such as the changes made by the development project, into their own cultural setting in order to operate effectively and to sustain, over the long-term, any improvements made as a result of the project.

“...basically their IL needs are related to ... the change-overs that we have made, by going into the community and saying “ok we’re going to set up a housing organisation”, we have set up new winners and losers, new powerful people in the community, people who wouldn’t have been powerful before now have control over housing assets and have information about how to manage that housing...” (P2)

Empowerment to sustain the positive changes resulting from the project is a key element and relates closely to the awareness structure that has been consistently present in all categories of description. In this category however, the ability to compete or ‘play the game’ has moved from a general background element, to being the primary structural element. Understanding how to ‘play the game’ is a key to successful project outcomes and potential further involvement in such projects.

“...they...constantly seek to understand their environment and to act on it in a way that allows them more control so they get more satisfaction out of life, and that the more information they have, the more they can do that, if they feel in control enough to be able to make decisions” (P2)

Figure 5



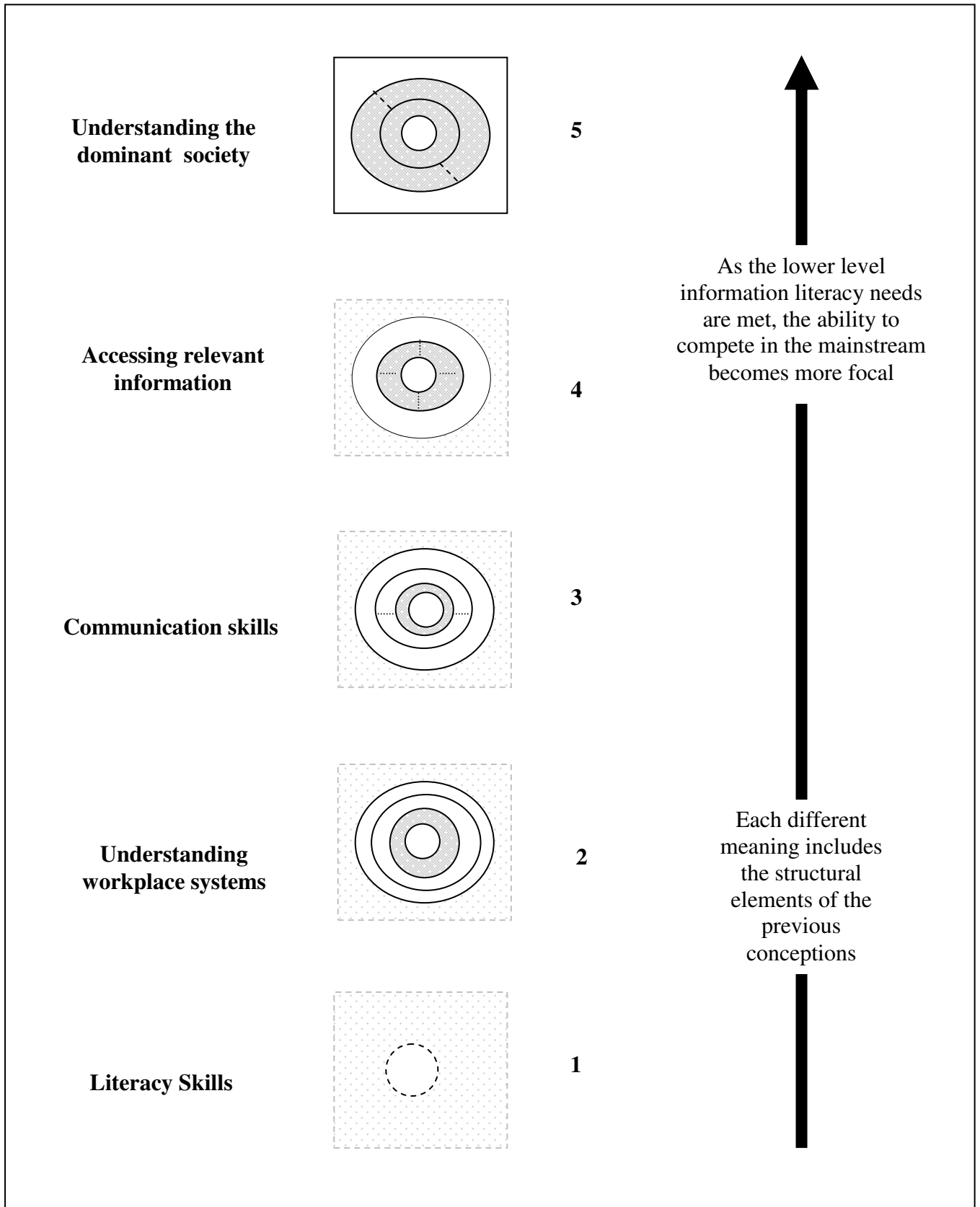
**Category 5.
Needing to understand mainstream social system**

5.2 Outcome space of information literacy needs

The outcome space represents the relationship between the individual conceptions. Its aim is to represent the phenomenon as a whole. The relationship between the various conceptions of information literacy needs in the context of this research is hierarchical in terms of an increasing degree of complexity of focal awareness elements. Each level builds on the last one.

The common, underlying feature in all conceptions is the notion of information literacy being necessary for the local worker to compete in the dominant system, or to use the words of a respondent – the ability ‘to play the game’. At the top-level conception, this underlying awareness becomes dominant and is represented as a new structural aspect. It is the nature of the relationship between it and the other elements that has changed in this conception (refer to Figure 6).

Figure 6: The phenomenon of Information Literacy Needs of Local workers in community development projects as perceived by external development staff



6. Potential implications of the results

The results of this exploratory study have revealed a number of varying ways in which development workers perceive the information literacy needs of local workers with whom they work in development projects. The results suggest that even where ICTs are not the primary focus of a project, their impact is significant because of the range of issues arising when people are confronted with unfamiliar technologies and workplace settings. Some potential implications which readers may wish to explore are described below. These implications may be of particular significance in relation to management of projects, staff development and training, and the development of information systems and structures within the context of cross-cultural development projects where local staff are introduced to ICTs for the first time.

6.1 Implications for management of projects and staff training

The study described five conceptions of the phenomenon under investigation. These conceptions exist in a hierarchical relationship with each other. That is, each one builds on the attainment of the previous one. The hierarchical arrangement of the outcome space suggests that in any cross-cultural development project, a step-by-step approach to meeting the information literacy needs of the local workers might be necessary. For instance, it is suggested that basic literacy skills need to be in place before someone is expected to be able to work within an office environment. Likewise, an understanding of how an office environment works is a precursor to being able to communicate effectively within that environment. Incorporating one's own cultural values and experience into an understanding of that office environment then enables communication between that environment and the local workers' broader

community. Being able to communicate between the two ‘systems’ or cultures then assists the local worker in accessing information that is relevant to their community’s needs.

At every level of conception described, it would appear there are implications for western project managers that go beyond what may usually be considered part of the defining features of information literacy and the issues associated with learning to use ICTs. That is, intertwined with the varying understandings of information literacy needs, there is the underlying issue of empowering the local worker to operate, or ‘play the game’, in the broader system – that of the dominant culture (or, in many cases, the culture from which funding comes). The higher up in the hierarchy of information literacy needs, as represented in the outcome space, the more significant it seems that the local workers develop an understanding of the broader socio-political context in which they are working.

These results also suggest that open communication between the western project managers and the local workers about the broader issues and assumptions surrounding the project is important in order to achieve the full potential of development projects. The hierarchical nature of the outcome space suggests, however, that this open communication be matched to the level at which the local worker is in relation to their actual level of information literacy within the context of the project. Such communication about the broader context may not be advisable in the early stages of the project, as the worker is focussed on meeting the lower level information literacy needs. Additionally, where projects have high information literacy *demands* of the

local workers, but their *actual* level of information literacy remains at the basic level, it would appear that long-term project success following the withdrawal of the western project team, is doubtful.

6.2 Implications for information systems and structures

Information professionals working in cross-cultural project environments may also need to consider the potential implications arising from the results of this exploratory study. For example, the design of information systems and tools might be revised according to the cultural context in which the project is based. There is already significant acknowledgement that programs involving the implementation of internet technology in Aboriginal communities in Australia, for instance, need to consider the different cultural needs of the participants (e.g. Mortimer, 2000).

The significance of cultural understanding is evident in two ways within the description of perceived information literacy needs of local workers arising from this study: (1) the importance of their own cultural experience, and (2) the importance of their understanding of the dominant culture and its associated values and assumptions. Yet, even within this context of a recognition that different approaches exist in relation to, say, the use of information in a traditional culture, it seems the onus remains with the local worker to adjust to the information systems of the dominant system. In other words, the assumption is that the local worker must use the current information systems of the dominant culture and translate these into their own cultural context in order to make them relevant.

An alternative approach might be the development of a structure where the information systems are established around the traditional, or local, information structures. In this approach, information professionals associated with the project would need to develop an understanding of the characteristics and complexities of the local information systems. This means a two-way exchange of information between the western team and the local worker in setting up information systems based on local information systems and structures. Even in situations where direct knowledge transfer is desired (e.g. technical know-how), the findings suggest that community context and relevance of information systems be considered significant factors potentially influencing the success of sustainable project outcomes.

Based on the findings in this exploratory study, the authors suggest that a broad and systematic approach to facilitating the effective use of information and technology should be a critical component of any development strategy that involves the use of ICTs. Simply providing access to new technologies is not enough to 'bridge the digital divide' or to achieve other goals of development. Strategies to facilitate the capacity of the local workers and communities to effectively interact with their ICT environment need to be introduced along with the technology. The enabling of local workers to navigate the dominant system and its associated workplace structures, access information relevant for their community, translate it into their community context and communicate it effectively in culturally appropriate ways, are all elements of a project which addresses the information literacy needs of those workers. It is proposed that addressing these needs will likely lead to a more effective use of information and technology in a context where people in developing communities are

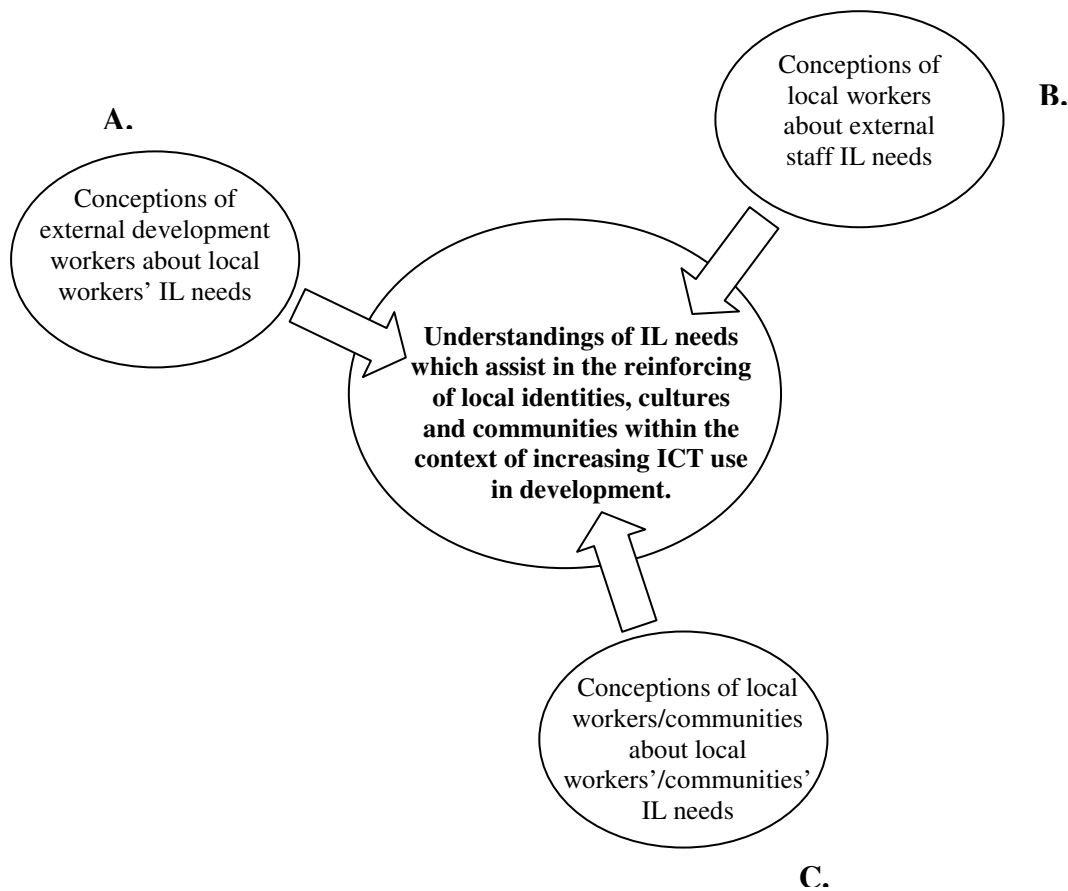
exposed to a higher level of ICT use than has previously been experienced. It would also appear necessary that these elements be addressed in order to enhance the “...sustainable economic and social development for individuals, communities and nations” (GKP, 2000).

7. Limitations and Future Research

The perspective from which this paper is written has been one of looking at ways to facilitate local individuals’ and communities’ participation in externally-imposed development projects, and thus, generally into the global mainstream. It is not the view of the authors that such approaches are necessarily the only means of achieving development goals.

Additionally, the needs identified in the outcomes of this study do not reflect the views of the local workers themselves. The limitation of this approach lies in the inherent danger of imposing yet another ‘outside’ view of what the local workers need. We suggest that the research approach used in this exploratory study could successfully be extended and applied from a number of other perspectives to achieve a range of data which could be triangulated to produce a greater depth of understanding of information literacy needs that could assist in reinforcing local identities, cultures and communities. Figure 7 portrays how the findings of this exploratory study could be used as part of a broader approach to investigating the information literacy needs associated with development projects and the use of ICTs in developing communities.

Figure 7



**The phenomenon of information literacy (IL) needs in cross-cultural development projects:
A multiple perspective approach**

For example, it is highly recommended that the research approach be used within the local community context in order to discover local workers' own perceptions of their information literacy needs ('C' in Figure 7). This would illuminate central issues to consider in adequately addressing information literacy needs which have been overlooked in this study. It might also be useful to the local communities to examine the conceptions held by local workers of the information literacy needs of external development workers ('B' in Figure 7). Such research could potentially lead to useful insights into how, for example, culturally appropriate information systems can be

designed. Moreover, it may reveal further strategies for facilitating effective information practices and utilising ICTs more appropriately within a cross-cultural development context.

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