GRASPING THE THISTLE- UNDERSTANDING THE IMPACT OF THE SCOTTISH INFORMATION LITERACY CURRICULUM ON THE EVERYDAY LIFE INFORMATION SEEKING BEHAVIOUR OF FAMILIES CONTAINING CHILDREN AGED 4-7 YEARS.

A SURVEY BASED DISSERTATION

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DECLARATION

This dissertation is submitted in part fulfilment of the requirements for the degree of M.Sc. Information and Library Studies of the University of Strathclyde.

I declare that, in accordance with University Regulation 20.1.20, this dissertation embodies the results of my own work and that it has been composed by myself.

Following normal academic conventions, I have made due acknowledgement to the work of others.

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ABSTRACT

This project was necessary as little research had been undertaken into the everyday life information seeking (ELIS) of children aged 4-7yrs. It focuses on the family as the core microworld first experienced by children and discusses the impacts of the primary school mesoworld on the family microworld. Schools support children's information seeking behaviour (ISB) through an information literacy (IL) curriculum. This study adopted a model of IL based on the *"Family of 21st century survival literacies"* (UNESCO, 2007, p.15), including digital, core, critical, media and cultural literacies. Children and parents were asked about their ELIS behaviour, available IL skills, and their knowledge of the IL content of the school curriculum. Questions about digital literacy (based on Thorvaldsen's key ICT tasks (Thorvaldsen, et al., 2011, p. 315) helped to confirm that self-protecting behaviours and social norms, indicative of a microworld, were present.

It was discovered that parents were a significant information source for young children, but that children's consultation with parents decreases as they get older. It is posited that this happens as children lose trust in their parents' ability to provide information relevant to their needs, due to cognitive dissonance created by differences between school and home. A model was created of children and parents' ELIS, showing the impact of toleration of delay and relevance on source choice and successful information need resolution.

The small number of interview participants ($N_{parents}$=9, $N_{children}$=12) meant that findings were quantified by a survey which focussed on information source use and IL skills of a larger group (N_{survey}=39). This confirmed that adults lacked cultural literacy skills. School based or home/distance learning resources were preferred by participants, with most being self-taught in digital and/or critical literacy. The convenience sampling produced an unintended predominance of bilingual families. Children's lack of core English literacy caused parents to assume gatekeeper/fixer roles (editing information for their children) but all families did this for the youngest children. Gaps existed between parents' knowledge/skills set; the experiential, holistic methods of ELIS for pleasure used in the home; and the purposeful information seeking of the school curriculum. Parents therefore require support from information professionals to ensure that they can reinforce the use of critical and cultural literacy skills outwith the school environment, and to enable children to resolve ELIS needs.

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CHAPTER 1 INTRODUCTION

This project investigated the everyday life information seeking (ELIS) needs of families containing children aged 4-7yrs within the context of the home. A degree of children's information seeking (IS) takes place away from professional advice and support, within the home environment and through family and friends, even when responding to educational needs. Despite recommendations for further research (Lu, 2010, p. 87; Shenton, 2004, p244; Shenton, 2007, p277; Case, 2008, p.304) little ELIS research has been undertaken with 4-7 year olds. This age range was chosen as at age 4 children begin to display independent information seeking behaviour (ISB) (Spink, et al., 2010, p197), but by age 7 increased literacy decreases the need for adult support, and there is evidence that using friends, rather than family, as an information source increases as children grow older (Agosto and Hughes-Hassell, 2005, p147). Yet it is unclear whether this is a natural, developmental process, or the result of families failing to meet children's needs or a combination of both. The lack of research into the ELIS of very young children aged 4-7yrs, and their families' abilities to meet their information needs, also means that information professionals are less able to provide appropriate services, alienating children and parents from service use.

A literature review of children's ISB, ELIS, and information literacy (IL), informed the construction of research questions and the methodology. The methodology focussed on the expressed needs and reported ISB of children through interviewing parents and children in their home. The findings were limited to a small convenience sample ($N_{children}$= 12, $N_{parents}$=9, and $N_{families}$=8) and a survey was also undertaken to quantify the results with a larger sample group. Theoretical sampling was then used to target parents with children in bilingual education, as the majority of interview participants ($n_{families}$=5, $N_{families}$=8) were bilingual. The literature review suggested that there were gaps in provision for families with children aged 4-7yrs and the results were therefore triangulated to provide a holistic view of needs, processes, and available resources.

It is hoped that the conclusions and recommendations of this study will inform the provision of better services for families, particularly homework supports for parents and better access to factual information sources for bilingual families. Parents with children in bilingual education have to continue to support older children's (age 7yrs) ELIS due to children's lack

of English literacy. This need to support the ELIS of young children who lack core literacy skills was also reported in non-bilingual families, yet many parents are self-taught or use skills or knowledge gained in the workplace or tertiary education, often in a different style to that which is taught via the school curriculum. This creates inequalities in family supports for children, which need to be addressed by information professionals to ensure all children receive appropriate support in their ELIS.

Context refers to external factors of space and time which impact on ISB/ELIS (Wang, 2011, p.25). Context is related to Fisher's theory of "information grounds" or "social settings where people go for a particular purpose/activity" (Meyers, Fisher and Marcoux, 2009, p.312). The home was the focus for the context of the interviews with parents and children, however, the impact of other contexts such as schools, libraries or work were discussed during interviews and examined as sources of IL training/support.

Core literacy refers to oral communication, and reading and writing, alpha/numeric skills and should be appropriate to age, abilities, situation and context.

Critical literacy is the use of critical faculties to

> "know when information is needed to help solve a problem or make a decision, how to articulate that information need in searchable terms and language, then search efficiently for the information, retrieve it, interpret and understand it, organize it, evaluate its credibility and authenticity, assess its relevance, communicate it to others if necessary, then utilize it." (UNESCO, 2007, p53-4)

Described by UNESCO as "information literacy" (ibid, 2007, pp.53-4), critical literacy is a distinct aspect of IL and this term was adopted to avoid confusion with an overarching concept which encompasses all five literacies. Critical literacy works alongside all of the other literacy skills in order to resolve information needs, but children (and parents) also require skills in the other literacies in order to access and use information.

Cultural literacy is

> "a knowledge of, and understanding, of how a country's.. religion's,... traditions, beliefs, symbols and icons, celebrations, and traditional means of communication (e.g. oralcy) impact the creation, storage, handling, communication, preservation and archiving of data, information and knowledge, using technologies." (UNESCO,2007, p20).

This includes information law, including data protection and the protection of economic and moral rights of authorship.

Digital literacy is the ability to use any form of electronic media, in line with the International Information and Communication Technology (ICT) Literacy Panel's definition

"ICT literacy is using digital technology, communication tools, and/or networks to access, manage, integrate, evaluate and create information in order to function in knowledge society" (ICT Literacy Panel, 2002 in Thorvaldsen, et al. 2011 p312).

This is wider than computer literacy, as it takes account of the use of mobile phones or hand held media storage devices for media access (such as i-pod's or tablets) and the numerous electronic toys available to children for game playing or learning, many of which are marketed as having educational or information resource functions (McPake, Plowman and Stephen, 2010, p.3). Digital literacy is not necessarily dependent on core literacy, as some students aged 10-12yrs with average or above average grades and low computer anxiety, still struggle with key ICT skills (Thorvaldsen, et al., 2011, p317).

Everyday life information seeking (ELIS) is a term for ISB which is not generated in the context of work or education (Savolainen, 1995, p.259).

Family is also used in acknowledgement of the input of siblings or close relatives (such as grandparents), who may be consulted by children in addition to or instead of parents.

Information A holistic view was adopted, similar to Johnson's (2003, p736) definition of "being able to discern patterns of matter and energy in the world around us."

Information literacy (IL) is an overarching term which encompasses a wide range of concepts for teaching and learning about, seeking, and using information. IL became a focus for this study as it is the means by which children's development of ISB is promoted in Scottish libraries and schools. The term "information literacy" therefore utilises the CILIP definition as "knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner." (Chartered Institute of Library and Information Professionals (CILIP) , 2012). Different concepts of IL exist and the model of **Core, Digital, Cultural, Critical and Media Literacy** (Figure 1) utilises the *"Family of 21st century survival literacies"* (UNESCO, 2007, p.15). These literacies enable all kinds of information seeking, and are therefore also applicable to ELIS. These categories were used to group interview and survey responses and to construct questions to provide a wide

understanding of the IL skills used by children and parents and to make recommendations for service development, based on apparent gaps in provision.

Information need is also used in a general, holistic sense and can be either internally or externally generated as people encounter the world.

Information seeking behaviour (ISB) is the processes undertaken as people try to deal with situations (Case, 2008, p43) or contexts.

Media literacy includes a wide range of media, including broadcasting and print media, and implies having access, understanding and a "means of creating/expressing oneself using the media." (UNESCO, 2007, p18).

Parents- are the parents or guardians with the main legal responsibility for the care of a child and with whom the child resides.

Situation refers to unique internal and external factors which generate information need or avoidance (Wang, 2011, p25).

Figure 1 Model of Information Literacy (IL)
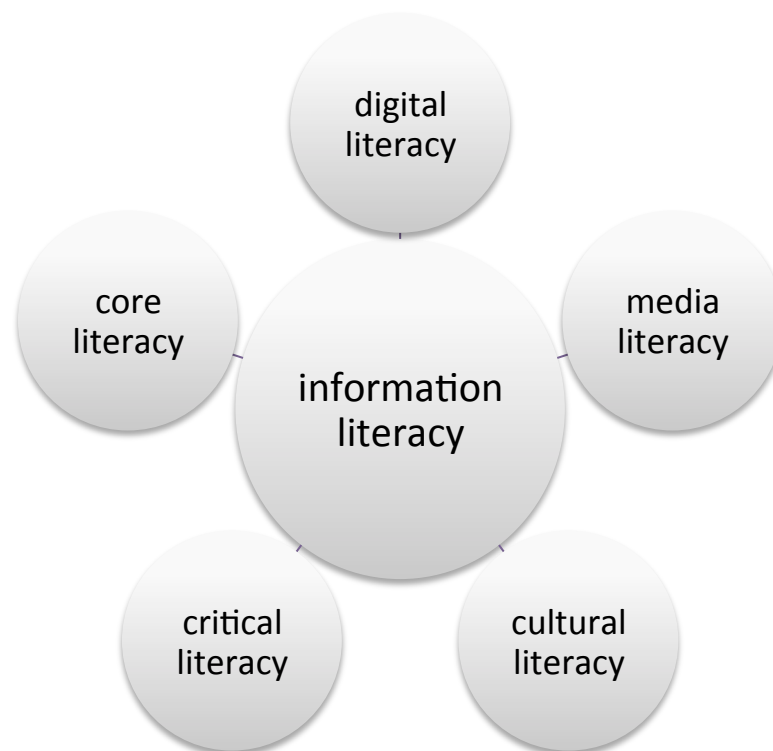
CHAPTER 3 LITERATURE REVIEW

3.1 Method

Initial reading utilised general texts on ISB (Case, 2008; Spink and Heinstrom (eds.), 2011; Ruthven and Kelly (eds.), 2011). This identified the main concepts and a seed search retrieved articles by main theorists including Savolainen (2006, 1995, 1993), Chatman (1999, 1996, 1991), Dervin (2010, 1999, 1998, 1989a and b) and Kuhlthau (2007, 1993, 1991). Keyword searches were then undertaken using "information seeking" AND children, and "information literacy" AND parents OR children, with filters for library and information studies. An initial search "everyday life information seeking" provided limited results as little research of this nature has been undertaken with young children. Information literacy was adopted as a search term after a website review established that this was the main way in which children's development of ISB was promoted in the school curriculum. A comparison of results for children and parent keyword searches confirmed that there has been little support for or research into the ISB of parents, as the search terms "parents information literacy" and found 136 articles while the search "children's information literacy" produced 27,764 articles. Most of these articles focussed on academic or health ISB, not general ELIS.

A further website search was undertaken to gain an understanding of current policy and standards for IL, with a focus on those which apply to Scotland. This included known IL resources such as the National Information Literacy Framework for Scotland (National Information Literacy Framework Scotland , 2010) and the Curriculum for Excellence (Education Scotland: Foghlam Alba: LT Scotland, [unknown a] and [unknown b]) and was extended via links to relevant websites. This reinforced the hypothesis that although there were a wide range of IL programmes aimed at students and school pupils, such as SCONUL's seven pillars, (SCONUL working group on information literacy, 2011b), Christine Bruce's seven faces of information literacy (Queensland university of technology: Faculty of science and technology, 2007) and Big 6 ((Big6, 2012), little appeared to be developed for parents in their role of supporting children's ISB. Indeed the Scottish Library and Information Council (SLIC) (Scottish Library and Information Council, 2009) and Education Scotland's Information and Critical Literacy homepage (Education Scotland; Foghlam Alba, [unknown d]) make no mention of parents as a source of support for children's ISB.

3.2 Key information seeking behaviour theorists

Few studies of ELIS have been undertaken with children, the most notable being Agosto and Hughes-Hassell's (2005) work with American teenagers, Meyers, Fisher and Marcoux's (2009) investigation of the ISB of children aged 9-12yrs or "tweens" and Shenton's (2007, 2004, Shenton and Dixon, 2003 and Shenton and Hay-Gibson, 2011) work with English school pupils. Most research focussed on academic information seeking, including Kuhlthau's (1991) seminal work with high school students and Gross' (2006) work on the influence of teacher imposed questions. Others focused on specific situations regarding health information needs (Franck, Noble, and McEvoy, 2008 and Johnson, 2003) or concentrated on interaction with information retrieval systems (Marchionini, 1995; Stephen, et. al., 2008; Druin, et al., 2010; Spink A. et al., 2010; and Yusoff, Landoni and Ruthven, 2010).

Qualitative, often constructivist, methods were favoured with articles referencing Savolainen (Savolainen, 1995), Kuhlthau's theory of uncertainty (Kulhthau, 1991, 1993) and Dervin's Sense-making theory[1] (Dervin, 2010, 1998, 1999, 1989a and b). Savolainen (1995, pp.261-2) introduced the concept of ELIS, based on Bourdieu's concept of "habitus." ELIS is "nonwork information seeking" or "citizen information seeking" (Savolainen, 1995, p259) and the study focuses on "mastery of life" as a determinant of ELIS cognitive styles in adults (Savolainen, 1995, pp.264-5). Savolainen acknowledges "the concrete examples received at home and at school influence this developmental process" (ibid, p264) but the concentration on adult abilities makes it inappropriate as a framework for children who are yet to develop cognitive abilities.

Savolainen has also discussed Dervin's Sense-making theory, which refers to people making and un-making sense when situations present an information gap (Savolainen, 1993, p.17), suggesting a problem solving approach. Case (2008, pp.97-108) notes that problem solving is not the only type of ISB, as problems may cause people to avoid information, but the theory is wider than this as it "conceptualizes all aspects of human being – cognitive,

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[1] This report follows the convention of "Sense-making" representing the approach rather than the phenomenon which it studies (Dervin, 1998, p36).

spiritual, physical and emotional"(Dervin, 2010, p.1000). Sense-making is therefore a person centred

> "framework for analyzing the respondent's situation, allowing one to arrive at a fuller and more whole understanding of one's own constructings...[to]...help in developing more responsive services" (Dervin, 1989a, p.31).

Meyers, Fisher and Marcoux' (2009, P312) have successfully used Dervin's "sense-making, micro-moment time line approach" to engage with older children aged 8-12yrs and this influenced the methodology of this project (see below, p.23). The Sense-making method requires a developed sense of memory, but children aged 2-4 yrs should already be capable of deferred imitation (imitation of events and objects which are not present) (Wadsworth, 2004, p. 58). The ability to use logic to reverse situations and events is not fully developed until after age 4 yrs and therefore children aged 2-3yrs were not interviewed.

Kuhlthau (1991, p361 and 362), is also influenced by Dervin, and by Kelly's "personal construct theory". Kuhlthau developed an "information seeking process" (Kuhlthau, 1991, p361) through multiple studies with high school students, college students and library patrons (Kuhlthau, 2007, p33). Kuhlthau's process focuses on a progress through the emotional, cognitive and behavioural stages of Initiation, Selection, Exploration, Formulation, Collection and Presentation (1991, Table 2, p.367). It explains acceptance of uncertainty and confusion as integral to the process, although if seekers then feel threatened by a situation they may give up altogether (1991, p366-367). The process was developed within an educational context, and the method is still used to teach information literacy in schools and libraries. It therefore does not take account of any differences between academic ISB and ELIS. Johnson's (2009, p596) mapping of ISB studies has shown that few studies have investigated the possibilities of information avoidance or the accidental acquisition of information. This concentration on purposeful acquisition of information suggested by Kuhlthau's process also extends to other IL programmes, such as Big6 (Big6, 2012), due to their academic context.

3.3 Studying children's information seeking

Shenton and Hay-Gibson (2011, p.72) warn of the dangers of treating children as "small adults" and inappropriately adopting theories or models from adult research. An understanding of children's developmental limitations therefore had to be considered before adopting a borrowed methodology/model. It is therefore not the purpose of this literature review to provide models or theories to which data has been forcibly fitted. The theories are therefore presented to either explain the formulation of the research methodology or were selected for inclusion retrospectively, due to their correlation with results, after data was collected, transcribed and coded.

Most studies focus on ISB of older children aged over 8 yrs (Shenton and Dixon, 2003, Shenton and Hay-Gibson, 2011; Meyers, Fisher and Marcoux, 2009; Thorvaldsen, et al., 2011) but although younger children "do not have much experience with textual information searching, [t]hey do...have experience in looking for information" (Cooper, 2004, P906). Studies of older children show that ISBs are already established by 10-11 yrs old (Meyers, Fisher and Marcoux, 2009, pp.330-6), therefore it was necessary to consider the impact of proximal development in the earlier formative years of cognitive and interpersonal abilities. Vygotsky's "zone of proximal development" is a key developmental theory, suggesting that children's learning is more successful with assistance (Gross, 2006, p5, Kuhlthau, 2007, p.36) and is associated with adults' roles as information mediators/ gatekeepers, particularly for very young children.

Piaget's theory of cognitive and affective development suggests that children younger than 2 do not yet have symbol and sign constructs necessary for the development of language (Wadsworth, 2004, p. 58). Children aged 2-7 yrs fall within the pre-operational stage of development but children aged 2-4 yrs display egocentric speech and have limited capabilities for intercommunicative interaction with an interviewer (ibid, p61). Egocentric speech is when a child may speak while others are present but their "collective monologues" do not relate to conversational form and there may be no intention for others to hear or respond to their words (ibid, p.61). Through socialisation older children (age 6-7 years) are capable of more intercommunicative speech, and have normalised language. 2-4 year olds may use the same word to represent different schemata from other people

whereas 6 year olds have knowledge constructs which are influenced by the norms of culture, society and the thoughts of others.

Age 7 children have already begun to enter the Concrete Operation stage of development and are capable of more logical thought and mutual communication of ideas with peers (ibid, p101) whereas prior to this stage children's main social relationships are as inferiors to adults. Younger children display unilateral respect for authority, yet by age 7-8 this has mutated into a mutual respect based on understanding and point of view (ibid, p105). The age of 4-7 yrs has therefore been utilised for sampling as children had interactive communication abilities but were still in a transition from inferior to equal social roles. Most importantly it is at this stage when children begin to evaluate parental advice or instructions, instead of "simply accepting preformed unilateral ideas" (ibid, p109).

In addition to the development of core literacy skills (such as word symbolism and intercommunicative speech), the children interviewed were also developing digital literacy skills. Druin's study of children aged 7-11yrs in a home setting, acknowledged that children's ISB goes beyond the requirements of homework (Druin, et al., p413). Based on Burdick's information search styles (ibid, 2010, p.414), the searcher's motivation and ability to focus were influential in children's development of successful ISB.[2] Children's search styles were defined as "*developing searchers*" (who can undertake simple queries but who may have difficulties due to lack of core literacy) (ibid, 2010, p.417); "*domain-specific searchers*" (who limit their searches to subjects which they have an existing interest) (ibid, 2010, p.417); "*power searchers*" (who search purposefully and with great confidence which is matched by their advanced abilities) (ibid, 2010, p.417); "*non-motivated searchers"* (who "lack the *will* to search") (ibid, 2010, p417); "*distracted searchers*" (who only become interested when a topic matches a personal interest and are easily distracted from tasks) (ibid, 2010, p.417); "*visual searchers*" (who search for visual content via images or videos) (ibid, 2010, p.418) and "*rule bound searchers*" (who stick to a set of self-imposed rules which they have developed from instruction by adults) (ibid, 2010, p418).

Druin also identified adult roles as influencers of children's search styles, classifying them as "*fixers*" (who search on children's behalf); "*demonstrators*" (who show children what to do

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[2] Here the term "successful" is the child's subjective assessment of ELIS resolution and includes information avoidance or the abandonment of the ELIS process, as deemed appropriate and acceptable by the child.

but allow independence in searching); and "*mentors*" (who give advice from a distance). This influence of parenting styles on the development of digital literacy supported a hypothesis that the available skills of parents influences the ELIS process adopted within a home context, and that these may vary from school contexts.

Shenton's (Shenton and Dixon, 2003, pp.12-14, 16 and 20; Shenton and Hay-Gibson, 2011, p63) research into the ISB of British school children has shown that adults act as gatekeepers to children's access to information, with even teenagers' access controlled through online filtering (Shenton, 2007, p.277 and 283). Children concealed their abilities as "honest disclosure of their difficulties would result in their loss of credibility in the eyes of the researcher" (Shenton, 2007, p.279) and aspirational reporting of ability has been observed in young children and their parents (Stephen, et al., 2008, p17). Children (and parents) can then be seen to display aspects of Chatman's theory of information poverty, particularly the withholding of access to information by more powerful others and the development of "self protective behaviours" such as secrecy and deception (Chatman, 1991, pp.197-8).

3.4 Self protecting behaviours, microworlds and mesoworlds.

Chatman's ethnographic research into the lives of janitors, single parents in the workplace, elderly people, and female prisoners developed a range of propositions encompassing theories of self protecting behaviours, small worlds and life in the round. (Chatman, 1991, 1996 and 1999). The family is the first small world which we encounter as children as it is one of predictable activity bound together by social controls or "social norms" (Chatman, 1999, p208). This small world is one of life in the round, where behaviour is under scrutiny from other family members, including adherence to normative language and behaviour codes or rules (Chatman, 1999, pp.211-2).

Burnett and Jaeger (2011) incorporate Chatman's theory of small worlds with Habermas' theory of lifeworlds (ibid, 2011, p.161), recognising that ISB and ELIS are affected by the influences of multiple worlds. Micro- (small) worlds (reflecting immediate social spheres); meso- (intermediate) worlds (the institutions which link worlds through mediation of

information); and macroworlds (lifeworlds) (the wider society; culture, belief and power systems) (ibid, 2011, pp.162 and 170) all have an effect and influence over the ISB of individuals. The family home is therefore regarded as the core, microworld which children first experience. Children aged 4-7yrs are in a situation of having family norms challenged as they enter a new mesoworld of nursery and primary school. It was hypothesised that Chatman's self protecting behaviours, such as secrecy, deception, and a lack of risk taking (with regards to exposure of information need), may be present in children and parents experiencing the selective introduction of new information by more powerful outsiders (Chatman, 1996, pp.197-8), i.e. the school curriculum as taught in their local primary school. Chatman's early application of gratification theory showed people disengaged from possible information sources due to mistrust in the relevance of that information to their situation (Chatman, 1991, p439 and 1996, pp.197-8). This then leads to a self created situation of information poverty, where people may have information sources available to them but, because of compliance to social norms or self protecting behaviours, they choose not to access those sources.

Adults have reported a need to trust people as sources of information (Ooi and Liew, 2011, p.248) and children may also begin to develop signs of information poverty as they deal with the conflicting social norms of family and school. The janitors interviewed by Chatman used their own knowledge and experience as their most trustworthy source of information (Chatman, 1991, p. 444) and it was necessary to establish if these behaviours were present in young children and their parents, regardless of class or economic status, as they would affect children's access to information.

3.5 When worlds collide...impacts of information literacy as part of a school curriculum

Any research into children's ELIS and ISB had to take account of the promotion of IL in schools via the curriculum, as this was the main way in which children receive instruction and guidance in ISB. The "Curriculum for Excellence" (Scottish Government: Smarter Scotland, et al., [unknown a], p.1) places information seeking skills within the context of information literacy describing them as "critical literacy," but the curriculum also has a holisitc view of literacy as encompassing critical, cultural and digital literacies through developing skills in "finding and using information" (Scottish Government: Smarter Scotland,

et al., [unknown]b, p.8) and reflecting "the increased use of multimodal texts, digital communication, social networking and the other forms of electronic communication" (Scottish Government: Smarter Scotland, et al., [unknown a], p.4).

The Chartered Institute of Library and Information Professionals (CILIP) suggests that IL requires skills to identify:-

  A need for information
  The resources available
  How to find information
  The need to evaluate results
  How to work with or exploit results
  Ethics and responsibility of use
  How to communicate or share your findings
  How to manage your findings (CILIP, 2012)

Understandibly a school curriculum limits ISB to the purposeful acquisition of information, but those utilising libraries for ELIS may not associate their need with the communication or management of findings. Indeed they may be in an anomylous state of knowledge (ASK) where they are unable to compose search terms or express their need until they have undertaken an initial survey of more general material (Belkin, Oddy, and Brooks, 1982, pp.61-2). Children (and adults) have information needs and experiences which are not purposeful or deliberate (Johnson, 2009, p.602) and ELIS can result in information avoidance or be the result of serendipitous information acquisition, with contexts, ignorance and irrationality all having an impact on ISB (Johnson, 2009, p596). It was therefore necessary to confirm whether any gaps existed between the curriculum, children's ELIS needs and/or parents' IL abilities.

Lu (2010, p83) found that only 16% of children sought information for problem solving, most instead sought information for a means of escape, to change their mood or avoided information altogether (ibid, 2010, p84). The school curriculum may not then adapt to children's wider ELIS as it curtails ISB situations to purposeful enquiry and constricts the utilisation of critical capacity to imposed questions, despite critical literacy being necessary

for succesful ELIS. "Rule bound" searchers become less confident in their searching and may find it difficult to adapt to different types of searching (Druin, 2010, p418). The utilisation of a process or model for IL may then actually impede children's ability to successfuly engage in ELIS, therefore it is not appropriate for the school curriculum to be the sole source of professional ISB support for children.

Chatman notes the use of mass media as the main source of information for the information poor, most notably television (Chatman, 1991, pp.441-2). This concurs with Agosto and Hughes- Hassel's (2005, p146) findings about the information source preferences of American teenagers, but "[t]elevision viewing is nearly always an "out of school" experience ...[therefore] ... the most likely teacher at the point of need for discussion of televised events is the child's parent" (Callison, 2004, p.37). There is then a need for parents to be able to support their children's development of media literacy, in respect of the critical capacity for analysis of televised media, otherwise there is a creation of a social norm, typical of information poverty. This suggests that the involvement of parents in reinforcing IL skills for ELIS, enhances children's development into information literate individuals, able to appropriately access, assess and/or avoid information as required by their information needs. UNESCO (2007, p.28; 2.17) recommends that parents should be partners in children's development of IL and the Scottish Schools (Parental Involvement) Act 2006 also "recognises the vital role that parents play in supporting their children's learning." (Scottish Executive; Education Department/Foghlam Alba, 2006, p.4), suggesting that supports which enable parents to support their children's ISB should be available. Yet the Scottish "Curriculum for Excellence" only mentions parents in the situation of providing information about the IL curriculum to parents (Scottish Government: Smarter Scotland, et al., [unknown a], p.1).

The use of IL as a means of developing successful ISB also causes difficulties as definitions vary and a focus on core, critical or cultural literacy does not recognise the range of skills and behaviours required to deal with ICT. Research into digital literacy in primary school pupils suggested that dysfunction in digital literacy is not connected to general literacy abilities or educational attainment (Thorvaldsen, et al., 2011, p319), therefore the restriction of IL to critical literacy may also be inappropriate in an age of increased digital provision. This further supports a hypothesis that the current IL curriculum is not adequate

for the essential twenty first century literacies of children, which encompasses, core, digital, critical, cultural and media literacy and may include information avoidance.

Differences between the IL curriculum, and existing ELIS behaviour, may lead children to turn to alternative sources for clarification. Due to inexperience and undeveloped thinking skills children are more likely to suffer "cognitive dissonance" where inconsistent cognitions lead to a sense of "psychological discomfort or tension" (Gross, 2001, p. 361 and Shenton and Hay-Gibson 2011, p.67). Children then develop "fixes that fail" strategies where a short term fix becomes a long-term failure (Shenton and Hay-Gibson, 2011, p.59) as they try to circumvent delays in achieving a desired state of information need resolution. Shenton and Hay-Gibson (2011, pp.59 and 63) have expanded upon Sice's model (see Figure 2) to show how delay and unintended consequences impact upon children's ISB, causing feedback loops where children have to repeat actions and requests. Parents' skills and knowledge affect their ability to act as gatekeepers to information (Rankin and Brock, 2009, p.45) and delays in resolving children's ELIS could be interpreted as a "fix that fails," making children lose trust in their parent's abilities as an information source.
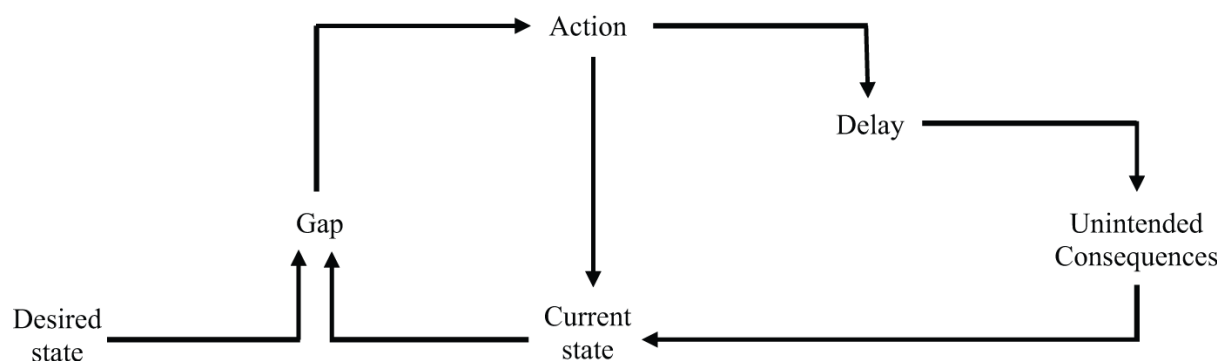
Figure 2- Simplified version of Sice's model (from Shenton and Hay-Gibson, 2011, p.59)

3.6 Supporting parents to support children

Parents have reported that their children have ICT skills which surpass their own abilities (Druin, et al., 2010, p420) affecting children's trust in their parents as a viable source of support. It was therefore necessary to seek clarification of available support and training resources which supported parents in supporting their children's ELIS. A review was undertaken of the websites of local government agencies in the West of Scotland. The agencies reviewed were chosen due to the location of the sample population for interviews within their catchment areas. A search was made of the websites of seven local councils and this was extended to include arms-length external organisation (ALEO) service providers (Audit Scotland, 2011, p. 3) and national organisations via links from the council websites.

Most of the websites concentrated on digital or core literacies, or on parenting skills and social care (South Lanarkshire Council, [unknown]b), including dealing with behaviour, healthy eating or sourcing childcare (East Dunbartonshire Council, 2009). Some councils placed focus on IL as part of the curriculum or learning and not as a wider skill for ELIS, placing "Family literacies learning" within a "Glasgow's learning" website (Glasgow's Learning, 2012b). Some provided homework and IT supports for parents, but participation was limited to those families who were assessed to be in the most need (Glasgow's Learning, 2012a) and supports were not available to a wider population of parents.

One council provided a parent's newsletter (North Lanarkshire Council, 2011a) and has provided a "Let's use the library" guide for parents (North Lanarkshire Council, 2009d). Parents were actively encouraged to use libraries as part of their children's information seeking, albeit in support of homework research. This council provided a wide range of IL skills as part of the curriculum, with examples of good practice including critical literacy in the form of "contents and index, scanning, keywords and note-taking" (North Lanarkshire Council, 2009a), the use of a library catalogue (North Lanarkshire Council, 2009b), and the adoption of the Big Six programme by schools (North Lanarkshire Council, 2009c). The accent, however, was on IL as part of school project work and not as applied to wider ELIS.

Few councils provided IL skills supports specifically for parents. Despite listing assumptions which affect practice and the uptake of IL skills which included

"information literacy is covered by or is the same as information technology (ICT)" (Irving, 2009a), the National Information Literacy Framework for Scotland (NILFS) showed that public libraries have focussed on digital literacy and core literacy (Irving, 2008). This was supported by the website review, with all of the councils providing supports in core literacy and digital literacy. These courses were targeted at adults in general, however, and not parents as a specific group. There is a Parentzone website (Education Scotland: Foghlam Alba, [2012]) which includes "resources for parents" and "supporting learning at home" sections, but no pages specifically deal with IL or extending skills to ELIS. The "supporting learning at home section" (Education Scotland: Foghlam Alba, [unknown f]) even suggests that parents should "ask [children] to explain the things you don't know about" placing a burden on children to support their parents learning, and possibly affecting their ability to trust parents as an information source.

Some councils did, however, provide advice for parents on the safe use of ICT by children (East Dunbartonshire Council, 2009, pp.37-8 and South Lanarkshire Council, [unknown]a); an aspect of cultural literacy which is important for ensuring the protection of children. This was provided in a context of being outside the curriculum and would therefore be more likely to be transfered to ELIS. The latest U.K. government Cyber-Security Strategy (Cabinet Office, 2011) also stresses awareness of cultural literacy through the Get Safe Online campaign (Cabinet office, et al., 2012) and the GLOW initiative (Education Scotland: Foghlam Alba, [unknown c]) provides "the world's first safe and secure online community for pupils, parents and teachers" (ibid, [unknown c], p2), taking the form of a "national intranet for education" (ibid, [unknown c], p2). Yet access to GLOW varies between councils (ibid, [unknown c], p.4) and some parents do not have access to password services.

From the evidence available it was not possible to gauge parent uptake of the few available adult classes/supports but they were targeted at small sections of the population assessed as having the greatest need, or were dependant on parent or school requests. There was a wide range of IL provision for children evidenced in the council websites, but this concentrated on the school curriculum and did not promote the idea of IL as a lifeskill applicable to situations or contexts outside of the classroom.   If information services limit IL activities to school projects, instead of portraying IL as necessary for wider ELIS, it is unsurprising if children fail to make the link of using these skills in their daily life. This

therefore suggested a hypothesis that gaps exist between ELIS behaviours and the models of the school IL curriculum, as the councils studied have been shown to place a focus is on IL as digital, critical or core literacy and not as a lifeskill for sourcing information in a wider context.

CHAPTER 4 RATIONALE FOR RESEARCH PROJECT

Little ELIS research had been undertaken with young children (Case, 2008, p.304-5) and older children's conceptions of lack of power already influenced information avoidance and self-reliance (Lu, 2010, p.85). Responding to a child's ELIS needs can be difficult as not all questions represent a problem solving situation and children may instead require emotional reassurance and support (Case, 2008, p.82), or need may be hidden in terms which are limited by a child's vocabulary or understanding of concepts (Ross, Nilsen, and Radford, 2009, p144). Context and situation are also important as they affect available resources, further limiting ISB development.

Gaps may exist between the IL skills which children are taught in school and children's ELIS behaviours, questioning the relevance of curriculum based content to wider needs outwith the educational context. Experienced gaps may then place more emphasis on family, siblings and peers as a source of learned behaviours for ELIS; but what if these sources do not have adequate ELIS skills themselves and are unwilling to admit that this is the case?

That IL supports would be made available "[a]t the request of nurseries, primary schools or parents" (East Renfrewshire Council, 2012) suggested that needs have to be expressed by parents. Yet information needs are often compromised in the act of expression (Taylor, 1968, quoted by Wang 2011, p.27) and as self protecting behaviours may lead to concealment of need or deception (Chatman, 1996, p197-8), gaps therefore may exist between expressed and actual needs. This then poses problems for information professionals as it becomes difficult to meet the needs of parents who conceal any needs for support by self rating their skills as "excellent" (Druin, et al., 2010, p.415). These parents still commented that their children's skills surpass their own (ibid, 2010, p.420), despite most of the children's skills being assessed as being developing searchers who lack abilities (ibid, 2010, p.417). This therefore suggested deception and concealment of need which could be tested by further reseach.

A review of the "Curriculum for Excellence" and the websites of local government organisations in the West of Scotland showed that information seeking skills are conveyed to children via a focus on IL. Available training, supports and attainment levels focus on digital, core and critical literacies, and there was little evidence of parents being given more

than basic information regarding curriculum content. This therefore suggests gaps exist between available support services; parents and children's skills; and children's ISB as evidenced by the work of Druin (et al., 2010), Shenton (2004, 2007; Shenton and Dixon, 2003; Shenton and Fitzgibbons, 2010; Shenton and Hay-Gibson, 2011), Meyers, Fischer and Marcoux (2009) and Spink, (et al., 2010). It was therefore necessary to research the behaviours and available skills of children and parents to confirm if gaps did exist between an IL curriculum, available services, and the social norms of the home, core microworld.

4.1 Research Hypothesis

1. That children and parents ISB may be affected by the self protecting behaviours of the family as a microworld.
2. That gaps exist between ELIS behaviours and the school IL curriculum.
3. That gaps exist between the IL abilities of parents and the expectations of IL attainment in the school curriculum.

4.2 Research Questions

1. Do children aged 4-7yrs and their parents display signs of self-protecting behaviours?
2. What differences are there between families' ISB and the school curriculum?
3. What differences are there between children and parents' IL skills and those promoted by the school curriculum?
4. What can information professionals do to support parents in overcoming these gaps and to support children's ISB?

4.3 Aim To investigate the processes families undertake to support 4-7yr old children's ELIS.

4.4 Objectives

1. To analyse children age 4-7yrs ELIS behaviour, particularly parental involvement in ELIS processes.
2. To report on parents' IL skills in contrast with those of their children and the "Curriculum for Excellence."
3. To make recommendations for ways in which information professionals can assist children and parents to access information and learn about IL.

<u>4.5 Deliverables</u>

1. A model of children aged 4-7yrs ELIS behaviour.

2. Recommendations for information and library service development, with regards to children and parents' IL needs.

3. Recommendations for further research to empirically prove any theory generated by this project.

CHAPTER 5 METHODOLOGY

5.1 A triangulated, grounded theory approach.

A recurring theme in ISB research is the utilisation of Glaser and Strauss' (1968) grounded theory methods and this informed the construction of this methodology (Grieg, Taylor and MacKay, 2007; Shenton and Dixon, 2003; Shenton, 2007; Makri, Blandford and Cox, 2011; Gonzalez-Teruel and Abad-Garcia, 2012; Ellis and Haugan, 1997; Barry and Schamber, 1998). Glaser and Strauss' (1968) grounded theory is inductive, employing a "constant comparative method" for the coding of research transcripts (Gonzalez-Teruel and Abad-Garcia, 2012, p.32). Various data collection techniques are employed, but the majority of studies favour a combination of methods with interviews, surveys and observation being popular (ibid, p33).

A criticism of ISB research is that many qualitative studies do not recount the methodology used or acknowledge the research limitations (Bates, 2004, p16); i.e. McKechnie (2000, p.70) maintains observed behaviour was normal, reliable and accurate, despite recording 99 instances of observer effect. Yet there has been increased emphasis on the need for qualitative research which actively involves children in assessment of their needs (Grieg, Taylor and MacKay, 2007, p.96), necessitated by changes in the school curriculum and the Children (Scotland) Act 1995 (UK government, 1995). Research paradigms have moved from a positivist "research on" to a more qualitative research "with children" focus (Grieg, Taylor and MacKay, 2007, p.89), therefore it was important to consult children and parents as part of a qualitative research process.

Young children may lack capacity to deal with the interview context, due to a lack of core literacy and their stage of development (Yusoff, Landoni and Ruthven, 2010, p.12) therefore parents were also interviewed and surveyed to give a richer picture of family ELIS, to assess if their available skills matched their children's needs and to provide evidence for the research questions. Information professionals' experience of involvement with users is often limited to those who expressed a need for help with using public access computers, or accessing information, and therefore experiencing a gap in IL, (Julien and Hoffman, 2008, pp.33 and 36-7) therefore it was decided not to include professionals' assessments of service users' skills.

5.2 Semistructured interviews

5.2.1 Parent interviews

Parent interviews obtained a description of children's ELIS; confirmed available parent IL skills; and were compared with the children's interviews to investigate if insiders in the core, microworld of the family displayed self protecting behaviours or social norms. The interview questions were designed to be open, understandable and short and they were tested with a pilot group of three adults and two children (aged three and six). The interviews established the ISB of children and parents as reported by examples, using similar methods to Meyers, Fisher and Marcoux's (2009) study of older children. They combined the use of Dervin's "sense-making, micro-moment time line approach"(Meyers, Fisher and Marcoux, 2009, P312) with open questions which defined the use of information sources within "information grounds" or "social settings where people go for a particular purpose/activity" (ibid, 2009, p.312). The present study therefore focused on the family as an information ground or core "microworld" (Burnett and Jaeger, 2011, p.161).

Ethics required that families were fully aware of, and consented to, the researchers presence and so unobtrusive observation was not possible (Grieg, Taylor and MacKay, 2007, p.174), but by taking a more ethnographic approach, some of the artificiality of the situation was removed. The home based interviews provided respondents with prompts to memory (Bates, 2004, p.23) and the interviewer used references to information sources which were visible in the home to prompt discussion and confirm use (Appendix 1, question 3d, Appendix 2- question 6). The parents were first asked to discuss two situations of ISB (Appendix 2- questions 1 and 2) and then further questions clarified information source use, including any restrictions on ICT use (Appendix2- question 4) and experiences of IL training/support (Appendix 2- question 7).

Thorvaldsen, et al. (2011, p.315) established a group of questions which confirm the digital literacy of participants. These key ICT skills questions were used to confirm the digital literacy skills of children and adults as there have been differences between staff and library users' assessments of digital literacy which suggests a "second-level digital divide" (Julien and Hoffman, 2008, p.22) associated with the self protecting behaviours of deception and

concealment. Parents and children were first asked to assess both parents' and children's ICT skills, using a Likert scale with a median score of 3 as follows:-

1	2	3	4	5
No skills/ very poor	Poor	Average	Good	Excellent

This confirmed whether Stephen's (et al., 2008, p.17) findings, of variance between parents' and children's reporting of digital literacy, were also present in this study. They were then asked how they would undertake key ICT tasks-

> "What would you do to search for something online?
>
> What would you do to download a file or document?
>
> Do you use email or social networking? Which one?"
>
> (Thorvaldsen, et al., 2011, p315)

In addition parents were asked "Can you tell me how to set the child protection filters on a pc?" to assess their digital and cultural literacy knowledge, and the controls that they placed over their children's information access.

Parent's knowledge of, and abilities in, IL were assessed by asking if they already had any training or skills in IL and where this took place. They were then asked about the IL training/support their children received in school (appendix 2, question 7) to confirm their knowledge of their children's exposure to IL through the curriculum.

Additional questions were included to ensure all aspects of ISB and IL were included in the interview-

"How do you decide whether a source is a good or bad one to use?" (critical literacy)

"Do you ever use a mobile phone to look up information?" (additional source)

Phones were included as a source as they had proved popular with teenagers (Agosto and Hughes- Hassell, 2005, p.141). Parents were also asked to rate how often they used their mobile phone for information seeking using a five point Likert scale with a median of 3-

Never	Every 2-3mths	Once a month	Every week	Every day
1	2	3	4	5

A final question "What can libraries do to help you better support your child's information seeking?" allowed expressed needs to inform the development of recommendations for ELIS support services.

Parents were also asked to give their occupation as this influenced their experience and development of IL. The school attended by their children was also identified in order to take account of differences in local curriculum delivery. This identified the predominance of children in bilingual education in this study.

Some degree of observation was, however, essential to ensure that recorded responses reflected normative behaviour. Audio recordings of interviews were made to allow notes to be taken of unspoken cues and body language. They were then "transcribed as soon as possible after interview to provide feedback and serve as a guide for other interviews" (Ellis and Haughan, 1997, p386). Recordings/data/notes had a code name assigned to each participant to ensure anonymity; all written notes, transcripts, and coding used code names only. Participants were given the opportunity to comment on written recordings at the end of the interview/observation sessions (Bates, 2004, p.22) and those participants who were directly quoted in the findings of the report were also individually contacted to gain permission for the inclusion of transcribed comments. A draft of findings was also distributed for comment to ensure participants retained control of their contribution/ portrayal in the report.

<u>5.2.2 Children's interviews</u>

Questions had to be carefully worded and open ended questions starting with "what" were much more appropriate for the very young (Grieg, Taylor and MacKay, 2007, p. 91-92). Clarification questions were avoided as young children may interpret repetition as having been incorrect in their initial response and so vary their answers (ibid, p.93). To check that children had not given aspirational responses, children were also asked what another child their age would do (Appendix 1 question 2c)(Stephen, et al., 2008, p.26) and their responses were also compared with those of their parents.

Research with children can become tokenistic if they are not fully involved in the method (Grieg, Taylor and MacKay, 2007, p.187). Involvement can, however, be an empowering process for children and those participating in this study were referred to as "research assistants" during home visits, and given a participation certificate and a small gift in appreciation of their time and patience (although children were not aware that they would receive a reward until after the interviews) (Stephen, et al., 2008, p. 29; Meyers, Fisher and Marcoux, 2009, p312).

Children were also given the opportunity to choose their "code name" and these code names then had basic demographic information added (i.e. M= male; F=female and a number for age) as this allowed a "clear audit trail" between data and report, and provides readers with demographic details about those quoted (Shenton, 2007, p. 278).

Children were first asked "what is information?" to ensure that they understood the concept. Once a shared definition was established between child and interviewer, children were asked to think about things that they had an interest in and how they would find out more about that interest (Appendix 1, Question 2). This established whether children were capable of the form of reflective thinking necessary to undertake a micro-moment time line approach and also gave examples of children's ISB.

Children need to have freedom to move around (Meyers, Fisher and Marcoux, 2009, p.310) and they were given regular opportunities to withdraw from the interview for a play break. Grieg, Taylor and Mackay, (2007, pp.88, 91, 158) suggest that some sort of activity be a focus for interview and children were asked to show the interviewer items to which they or

their parents refered during interview. They were also asked to think about a time when they wanted to find out more about something- to tell the interviewer what that was and what they did next and to physically demonstrate what they would do using available resources within the home (Appendix 1, question 4), in a similar manner to Shenton and Dixon's (2003, p.9) interview structure used with children in Northern England. This also limited intrusion into family life as interview and observation took place at the same time.

Children were also asked more direct questions regarding the availability of information sources and which ones they used. Using Meyers, Fisher and Marcoux's (2009, p312) source categories, children were asked questions about the use of people, things, books and magazines, and ICT and media technology such as television, computers and games (Appendix 1- Question 3). As a "less-advantaged group," children experience barriers to access to information (Sin, 2011, pp.182-183 and Meyers, Fisher and Marcoux, 2009, p320) therefore question 5 "What stops you from finding out the stuff that you want to know?" (Appendix 1) aimed to confirm children's experiences. Parental controls have posed a barrier to children's development of digital literacy skills (McPake, Plowman and Stephen, 2010, pp.10, 13 and 18) and it was important to also establish what resources (electronic or otherwise) children had access to within the family home and what restrictions, if any, parents placed on their use (Appendix 1, questions 3, 5; Appendix 2, questions 4 and 11).

Children were also asked about their experiences of IL within the school curriculum, but in a manner which they could more easily understand; asking if their teacher had taught them any ways of finding information and if they used these skills outside of school (appendix 1 question 6). The questions which graded the digital literacy abilities of children and parents and the Key ICT skills confirmation questions were also used in the children's interviews and then compared with the responses of the parent interviews to assess whether any self protecting behaviours were present and if they had digital literacy support needs (Appendix 1, question 7). They were also asked how they decided which sources to use, to help assess critical literacy (appendix 1, question 7.f).

Finally children were also asked "What can libraries/information providers do to help you find information?" This again helped to construct recommendations for service

development based on expressed need, in response to objective three and research question four.

5.2.3 Creating grounded theory through a comparative method of interview coding

Coding was by means of a "constant comparative method of qualitative analysis" (Glaser and Strauss, 1968, chapter V) where theory generation was an ongoing process, as "[j]oint collection, coding and analysis of data [should] be done together as much as possible." (ibid, 1968, p43) There are 4 stages to the method:-

1. comparing incidents applicable to each category.
2. integrating categories and their properties
3. delimiting the theory, and
4.   writing the theory. (ibid, 1968, p. 105)

The initial interviews generated coding categories for comparison with subsequent interviews. Categories were generated by both the researcher (through the reduction of similar responses/categories) and by the language of the respondents as expressed in the interviews (ibid, 1968, pp. 110 &107). This created findings which are recognisable to laymen and participants, and useful for the "substantive area" of the research (in this case the support of family ELIS) (ibid, 1968, pp. 237 & 245). This ongoing process generated categories until "theoretical saturation" suggested that no new categories would be expressed (Barry and Schamber, 1998, p.222). New categories are normally only coded from their emergence (Glaser and Strauss, 1968, p.112) and once saturation of a category occurs, no new instances of that category should be recorded (ibid, 1968, p73). The small sample and the need to evidence findings meant, however, that instances of categories from all interviews were recorded, as this helped to substantiate predominant categories.

The first mention of a category by a participant was the only instance included in the calculation of frequency of category appearance. This gave a maximum of 9 responses in parent interviews and 12 responses in child interviews. Both child and adult participants, (due to the micro-timeline approach of questions) mentioned categories such as sources and parental controls outwith the assigned questions. Categories were therefore subject to "axial coding" or

''the process of relating categories to their sub-categories, termed 'axial' because
coding occurs around the axis of a category, linking categories at the level of
properties and dimensions" (Strauss and Corbin, 1998, p. 121).

Categories were then integrated and grouped, according to their common properties.
Similar responses were placed together and dissimilar responses apart, in a similar fashion
to creating a taxonomy. The categories were grouped as follows:- interview behaviour,
information needs, information sources, ISB, digital literacy (including supervision/child
protection), knowledge of IL, homework support recommendations and library service
recommendations. Categories were calculated separately for child and parent interviews to
allow for comparison and the groupings inform the structure of the evaluation of results
chapter (Chapter 6 below). Transcripts were further examined to identify the order in which
ISBs and sources were mentioned and this informed the construction of a model of children
and parents' ELIS process.

5.2.4 Coding and comparing ICT skills

The coding of the responses to the ICT skills questions were based on self-assessments by
parents and children and the subjective assessments of the researcher. Parents and children
were asked to self code their abilities and to code the abilities of their respective
children/parents using the same scale. The answers were then compared to assess whether
there was any aspirational or under-reporting of skills. To attempt to overcome the
subjectivity of the participants' and researcher's assessment of skills, the responses of the
parents and children to the information technology skills assessment questions (appendix 1
question 7 and appendix 2 questions 5 and 8-11) were coded by comparing the answers of
all child and parent respondents, to establish an average response for each question (see
Tables 1 and 2 below). The participants were then graded in relation to that average
response using the same Likert scale of

1	2	3	4	5
No skills	Poor	Average	Good	Excellent

allocating the average response the median score of 3.

An average of individual's grades for all questions was then calculated to give their mean ICT
ability rating. Answers throughout the interview were also considered when calculating the

mean ratings for participant ability as some parents gave additional information regarding search techniques or child protection controls elsewhere in the interview. This then made allowances for no use of email/social networking being a common answer for children, as most children were fully aware of what facebook/email was (and may have already had adaptable skills which would have enabled use) but were not allowed to use it by their parents. This therefore avoided subjectively comparing the responses to an external scale and maintained the usage of a constant, comparative, grounded theory method.

Table 1 Average children's responses to digital literacy questions

Question	Median=3 (Average) response
How do you search for something online?	Use internet/Google (no expansion)
How do you download a file? (Music or Video)	Go online and/or click on it
Do you use email or social networking?	No use of either but shows knowledge of what they are (a poor (2) response was not knowing what one was and not knowing what either was rated 1)
When you look for stuff how do you decide what things or people to use?	Ask someone for help

Table 2 Average adult responses to digital literacy questions

Question	Median=3 (Average) response
How do you search for something online?	Use internet/Google- type in search terms
How do you download a file or document?	Go online, click on item to select
Do you use email or social networking?	Email use but no social networking (no expansion on issues surrounding social networking or how to use either)
Can you set the child protection filters on a PC?	Explained issues surrounding protection and what the filters are but cannot fully explain process (a poor (2) response was a lack of knowledge of why this was necessary, a no skills (1) was no knowledge of what child protection filters were)
How do you decide whether a source is a good or bad one to use for your child?	Appropriateness to child's level of understanding and their information need (cognitive and/or situational relevance)[3]

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[3] Cognitive and situational relevance as described by Saracevic (1996, p.12)

5.3 Information literacy survey

The interviews were triangulated by survey responses in a manner similar to Shenton (2007, p.277). This ensured that coding was accurate and reliable; provided a more detailed understanding of expressed needs; and quantified the participant responses. The survey aimed to confirm information source use; perceptions of IL within a wider population and their experiences of IL support; and recommendations for ways in which services can better support IL needs. The survey also established whether families interviewed were typical in their abilities and experiences of IL training/support by giving a quantitative measurement of abilities and experiences of a wider population. It was piloted by five participants with a wide range of occupations and refined according to comments.

IL has a wide range of definitions and the parents' and children's interview responses displayed a lack of understanding of the concept. The first question established if people do have a concept of IL, and if so what that is. The wording was vague, so that the response given was not influenced by the definitions used by the researcher. The subsequent questions, regarding experience of IL, were not visible when answering this question.

Question 2 and 3 (see appendix 3) corroborated the parents'/children's preferred information sources, including the same Likert scale for mobile phone use (see p.25 above) and Question 4 also asked survey participants to self assess their IL skills using the same Likert scale as the interview questions (see p. 24 above). This expanded the researcher's understanding of where there may be gaps in participants' knowledge/skills set and allowed for comparison with interview participants' responses to similar questions.

Question format reflected the key information literacies (Figure 1) to ensure a wide range of skills and abilities were reported on by participants, but they had to be reworded in a way which was easily understood. "Computer/IT use" therefore refers to digital literacy; "accessing and using media" to media literacy; "finding and assessing useful information" to critical literacy; "information law" to cultural literacy; "communication (reading/writing)" to core literacy. Questions four and five assessed participants' experience of existing IL supports and training, and question six allowed participants to express need by selecting the form and location of future IL supports.

"Self taught" was included as an option for question five as in Julien and Hoffman's (2008, p.31) study "the largest proportion of customers interviewed ... said that they were self-taught," therefore this was an anticipated participant response. An option of homework support was also included to confirm the comments of parents interviewed. Additional demographic questions seven-ten (sex, age, children in family, occupation) were also included to enable the delimitation of results in comparison with the findings of the parent/child interviews.

Quantitative findings were calculated using both online automatic functions and via the researcher's axial coding of the open questions, "what is information literacy?" and occupation. The results were then compared to the findings of the parent/child interviews, and the IL curriculum and available IL supports as identified by the literature review.

5.4 Sampling

Convenience sampling was employed as field work took place during Scottish schools' summer holidays, limiting the availability of participants. The study was advertised via Facebook, through word of mouth, through leaflets distributed at a bilingual youth club, through the e-mailing contacts list for a youth voluntary organisation, and through the distribution of posters and leaflets to afterschool clubs in Glasgow and East Renfrewshire. This led to an unintended predominance of bilingual families as interview participants ($n_{families}$=5, $N_{families}$=8), however this was seen as an opportunity to explore their ISB/ELIS in contrast to those families who had children in mainstream education.

The survey was launched as an online survey via the Survey Monkey website (Survey Monkey, 2012), advertised via Facebook and email, and then snowballed using word of mouth. It was decided to specifically target parents via theoretical sampling (Glaser and Strauss, 1968, p.45), and a bilingual, family learning project granted the researcher access to distribute paper surveys. A short introduction was also given in Gàidhlig to help encourage responses from those parents. The survey was then further advertised via a bilingual parents' Facebook group. This "theoretical sampling" helped to confirm the basic properties established by the interview coding (ibid, 1968, p.55).

5.5 Ethics

Full approval from the Ethics committee was granted prior to commencement of the project. The researcher is registered with the Protecting Vulnerable Groups (PVG) Scheme (Disclosure Scotland, [2009]) and participants gave written consent, including explicit permission for audio recordings, by signing consent forms (see Appendix 4 and 5). Children and parents received verbal and written explanations of the nature of the study, including purpose and procedures, how data would be used and stored, and an explanation of confidentiality (see appendix 4 and 5). This study involved the reported behaviour of minors, and participants were also made aware of the need for child protection to take precedence over confidentiality should concerns arise. Only one child did not grant consent for recording but agreed to written notes being taken instead. Extra care was taken to ensure that all children and adults understood the voluntary nature of participation in the study and that participation could be withdrawn at any time, including the use of data gathered. Children may not fully comprehend the nature of research and so time was taken to ensure they understood their involvement and disruptive behaviour was considered a withdrawal of consent (Stephen, et al., 2008, p.14).

Participation in the surveys was also voluntary and there was no requirement for participants to answer any particular question. Online survey completion was anonymous and paper surveys were collected in a way that ensured anonymity. Data was stored according to Data Protection Act 1998 principles (Information Commissioners Office, [unknown]) (see Appendix 5, p.97 below).

CHAPTER 6 PRESENTATION AND EVALUATION OF RESULTS

The interviews were a qualitative method and the significance of the responses discussed below was qualified through comparison with the responses of other interview participants. n=1 responses were omitted if it was not possible to further quantify their inclusion via available survey response data, comparison with available literature, or their relationship to the main category groupings of observed interview behaviour, information needs, information sources, ISB, digital literacy, IL, library service recommendations and homework support recommendations. The survey findings are then presented in order to quantify the interview results. Comparisons were then made, in order to substantiate and triangulate findings referred to in the discussion and recommendations.

6.1 Interviews

Eight families (N_f=8) were interviewed giving a total of nine parents (N_p=9) and twelve children (N_c=12). Parent interviews lasted an average of 45 minutes and children's 20 minutes.

6.1.1 Observed interview behaviour

6.1.1.a Children's ability to cope with the interview process

Young children may lack capacity for responding to questions, however preoperational children aged 2-7yrs are capable of deferred imitation and the recounting of previous events (Wadsworth, 2004, p.58). Only the very youngest children LovelyF4 and PrincessF5 displayed "collective monologue" behaviour (Wadsworth, 2004, p.61) and neither had yet been socialised in question response by experience of the small world of primary school. The other children all displayed an ability to interact with the interview format, suggesting that experience of the school mesoworld had made them more comfortable with questioning. There was little evidence of young children having difficulties with clarification questions. Siblings asked to be interviewed together, and all of the children interviewed in pairs displayed more confidence in their answers. Siblings either gave the same answers or responded "the same" (most notably MickeyM5 and MinnieF7), or maintained their response despite their sibling's disagreement. This lack of deviation from previously given answers suggests that children aged 4-7yrs do not interpret clarification questions as having

been incorrect in their original answer as suggested by Grieg, Taylor and MacKay (2007, pp.91-3).

Question four in the children's interview (where children were asked to physically show the interviewer the process which they undertook to find information) was successful for only three children. This was due to children not tolerating an interview time of longer than fifteen minutes (n=8, N_c=12). Most children, however, managed to answer question 2 (Appendix 1), regarding something that they liked to find out about (n=8) and to give examples of what sources they used and their ICT skills. Despite question four being unsuccessful, eight of the children interviewed spontaneously showed the researcher items which they used to seek or record information, including a digital camera and books (CatF5) and a map (BatmanM5).

The children's ability to answer the question "what would another child do?" (Appendix 1, question 2c) varied, but the majority of children answered both questions (n=7, N_c=12). This question elicited a response from the few children who had said "don't know" to previous questions, as two of the three non-respondents gave an answer to this question instead.

6.1.1b Parent interview behaviour

During interview seven parents displayed changes in tone of voice and other behavioural signs of stress when being asked about their own abilities, particularly during the section where they were asked to assess their own ICT skills. DolphinF39 mentioned that the interview process had made her question her current methods for supporting her children's ELIS and referred to feeling stressed when being questioned about her digital literacy skills. This suggests that the interview process affected parents emotional states, possibly causing them to display the self-protecting behaviours described below (see below pp.49-51).

6.1.2 Demographic trends

6.1.2a Sex

Only two fathers were interviewed and the rest of the participants were mothers (n=7, N_p=9). Eight girls and four boys were interviewed.

<u>6.1.2b Family size</u>

The parents were separated in two families (one bilingual, one mainstream education), but all of the children mainly resided in the home in which they were interviewed.

Only one family contained a single child, four contained two children, one contained three children and two contained four children.

<u>6.1.2c Age</u>

The parents interviewed were aged 30-39yrs (six parents) or 40-49yrs (three parents). The older age of the parents interviewed (30-49yrs) had increased their "mastery of life" (Savolainen, 1995, p.264), and eight parents said they were confident that they could meet their children's ELIS needs, with four mothers qualifying this with "most of the time." Two parents, however, referred to this confidence being due to the young age of their children;

"I'm quite confident that I can answer most questions that a 5 year old will ask." (ZogM38)

One 4 year old, four 5 year olds, three 6 year olds, and four 7 year olds were interviewed. Older children in both bilingual and mainstream families were more likely to mention Google during interview, even arguing with younger siblings that "Google is the internet" (SheepF6). Older children (aged 6-7yrs) had received a greater exposure to IL tuition at school and parents had a greater knowledge of their older children's exposure to core literacy/digital literacy, with six parents referring to IL lessons (n=6, N_p=9). The four parents with older children specifically referred to ICT lessons, including

> "MinnieF7 definitely does and has done, in p1 she learned how to use Google and was taught how to recognise the Google brand and label, and how to find that and how to type things in, that was one of the key things that she learned in p1." (KermitF36)

This older child was in bilingual education, yet although a version of Google is available with functions displayed in her additional language,[4] the search results produced do not filter out English language resources and none of the parents or children mentioned this version of Google. This highlights an unexpected, observation that English language information

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[4] Here "additional language" refers to the language spoken or understood by children in addition to English.

sources are predominantly used by the bilingual families interviewed, due to availability of resources and/or parents' core literacy in the additional language.

6.1.2d Bilingualism

More than half the families interviewed were bilingual (n=5, N_f=8)- and seven of the children interviewed received a bilingual education either at school or home (n=7, N_c=12). Both parents and children in two of the families referred to abilities in a third language (Cat and Rabbit families), showing the regarded importance of linguistic skills. Despite this only three parents referred to using information sources in their additional language, including one mention of the use of a web browser in the additional language (GiraffeF36). This confirms the researcher's observations that available resources for bilingual families in local libraries (Carter, 2012) and online is poor, particularly factual materials. Four of the bilingual parents mentioned their child's lack of English literacy as having an impact on their style of supporting their childrens' ELIS, forcing them to become "fixers" rather than "demonstrators" or "mentors" ((Druin, et al., 2010, p.416). Two of the parents with children in mainstream education also mentioned having to read or interpret for their youngest child (for example LovelyF4) but they did not do this for older children (aged 7yrs).

Bilingual children are represented as having better cognitive abilities than other children (Lauchlan, Parisi and Fadda, 2012) however interview responses suggested that a lack of available minority language resources for ELIS limited children's unmediated access to information and affected their development of digital literacy skills. Five of the bilingual children (n=5, N_{bc}=7) had ICT skill ratings of three or less. Most of the mainstream educated children interviewed were older (aged 6-7yrs) and this affected their exposure to IL and their ICT knowledge, however LovelyF4 (mainstream) was able to describe online searching (including picture searching for relevance) whereas MinnieF7 (bilingual) had a mean ICT skills rating of 3.5 rating (average-good). Low core English literacy of parents did not impact on sources used, as the majority of parents interviewed were educated to degree or college level and had professional jobs.

6.1.2 e Occupation and ELIS confidence

Three of the mothers gave their occupation as "Homemaker," however all had received tertiary education and all had professional careers prior to parenthood. The other four mothers interviewed were all professionals. Two families contained parents who would be seen as a people of standing in the bilingual mesoworld, due to their involvement in organisations which promote a minority language and bilingual education. One father also had a professional occupation. Fathers who were not interviewed were also mainly professionals ($n=4$, $N_f=8$). Parents had therefore been to university or college ($n=6$, $N_p=9$) and received some sort of training there, particularly accessing and using information. BountyF43 was the only parent who was aware of IL as a concept, as it had been a focus for research at the university where she worked and she commented on her greater capacity to meet her children's information needs saying

"if you are educated yourself, you have a better reserve of information and... you have better access to information."

Parents were also confident that their children were generally happy ($n=8$) or satisfied ($n=4$) with their responses to information needs.

6.1.3 Information and information needs

Children's question one (see appendix 1) established a shared meaning for the term "information." The children's information sheet/consent sheet (see appendix 4) was also used to discuss the concept prior to the start of interviews, and this question was successfully answered by half of the children ($n=6$, $N_c=12$), and coded as "things you find out about," due to the common responses-

"It's *something* which you tell people like *they want to know about*."(HotdogM6)

"It's *something* where *you find out things* ..."(WolfF7)

Only two children gave the response, "Don't know." Once the interviewer had established a shared meaning for "information", seven of the children displayed knowledge of the concept, by using the term during the interview.

The interview situation generated an information need for five of the children. HotdogM6 wanted to know "if you would die if you cut your arm off?" generated by his observation of LovelyF4 using scissors to make something during the interview. This immediacy of need, generated by the environment or an activity, was also commented on by six parents. Three parents also referred to new experiences engendering need and three parents mentioned an interest in human biology created by a pregnancy in the family. Environment/activity also sustained ELIS on the theme of pregnancy as one child asked questions-

> "All over the place, particularly ... if he's encountering a new situation, he will often refer back to the baby and how the baby is responding, ... does the baby like being at this park just now? Does the baby like that chocolate biscuit you're eating?" (KermitF36)

The theme of "finding out about the world" was therefore mentioned by seven of the parents interviewed, particularly animals/nature ($n=5$, $N_p=9$). This interest in animals/nature was also expressed by children ($n=7$, $N_c=12$). Geography was also mentioned by two children and two parents. These interests appeared to be driven by a need to name things, typical of preoperational children's developing understanding of symbolism (Berk, 2006, p.235) and four parents referred to the use of nature guidebooks to name things. Core literacy in additional languages, another example of symbolism, was mentioned by two of the children and two of the parents. These were the two families where the child had exposure to a third language, and linguistic skills were their microworld, social norm.

Spirituality was mentioned by two of the children and one parent. This aspect of information need was generated by children's cognitive dissonance as they tried to make sense of differing beliefs, with one child referring to family members' belief differences. RabbitF7 also demonstrated an attempt to resolve her cognitive dissonance regarding information about a saint. Discussing differences in cultural practices, between Scotland and the country where her additional language was spoken, she filled her experienced gaps in knowledge by referring to Spain, as her third language was Spanish- a "fixes that fail" (Shenton and Hay-Gibson, 2011, p.59) attempt to resolve dissonance.

There were gender differences when describing information needs, with two boys mentioning computer games (MonkeyM6 and HotdogM6) and older girls referring to parties

(CoconutF7 and RabbitF7). PrincessF5 displayed a developing understanding that there were differences in boys' and girls' games, describing the "dog's shooting game" as "actually for boys, but I still play it;" an example of children's information avoidance (Johnson, 2009, p.593) via rejection of information. Six parents referred to media such as games, TV programmes, toys or games, but also as generators of information need and not as information sources.

6.1.4 Information sources (see Table 3)

The most popular sources of information mentioned by children interviewed were people (n=12, N_c=12)[5], computers (n=10) or books (n=8), confirming the findings of Meyers, Fisher and Marcoux (2009, p. 316). Five children also mentioned using libraries, and three to using books in that context.

The people most commonly used as an information source were parents (n=12, N_c=12), although older children gave a response of computer/internet before referring to parents (n=5). Three children used grandparents as a source and five parents referred to their own parents. The influence of the school mesoworld was displayed by five children, responding that teachers were an information source.

The use of games (including DS and playstations) was confirmed by six children and this included educational games such as Oregon computers (n=2, N=12) and Leaptag resources (n=2, N=12). Parents also referred to educational games as a source of core and digital literacy skills (n=4, N=9).

The information source most commonly used by parents was their own memory/knowledge (n=9, N=9) and this was referred to before other sources, an ELIS behaviour noted by Savolainen (1995, p288). All of the parents also referred to using people (n=9) and computers (n=9) as an information source. Six referred to using the other parent, five to using their own parents and five to using their children, particularly older children (n=4, N=5).

Books were also a popular source for adults (n=9). Written materials became the focus

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[5] Despite the inclusion of a question "what people do you use?" not all children answered this question and the responses were collected from throughout the interview

Table 3 Information sources

Source type	Parents' responses $N_p=9$	Children's responses $N_c=12$
Own knowledge/memory	**9**	**12**
Computers/ICT	**9**	**12**
Google	7	6
Internet	6	2
Wikipedia	5	
Gaming	4	6
Educational games	4	4
YouTube	3	
Phone	**3**	**4**
Books	**9**	**8**
Newspapers/Magazines/Comics	4	5
Television	**7**	**4**
People	**9**	**12**
According to expertise	9	7
Children's other parent	6	
Parents	5	**12**
Friends	2	5
Teacher		5
Adults		4
Own Children	5	
Older children	4	3
Grandparents		3
Brothers/sisters	3	3
Voluntary organisations	3	
Places	**7**	**6**
Libraries	6	5
Museums	5	1
Art gallery	3	1
Natural environment	3	3
Observation animals/toys		**3/2**

of discussions about the differences between facts and fiction. Half of the children displayed knowledge of those differences (n=6, N_c=12) and four referred to the availability of information in fictional works. Five of the children also received information from magazines and comics, distinguishing between factual and fictional content as "it still gives information about how you make telly and stuff" (MonkeyM6).

Television was a source of information for seven adults and four children, with the BBC as the most trusted source (n_p=4, n_c=2). When discussing computers, seven parents mentioned Google, six mentioned websites, five Wikipedia, and three YouTube. This exemplified information avoidance in parents as although three were aware of the lack of accuracy in Wikipedia, they still chose to use it. Google was also a popular source for children (n=6).

Four children referred to using phones as a source, suggesting aspirational responses as only three adults used their phone to search for information, albeit on a daily basis. This dichotomy, between constant use or none at all, was also reported in the general information survey (see below p.58). The immediacy of children's needs and their inability to withstand delay had a bearing on phone use as

> "….. you can't always get to the pc or the laptop so the phone is a good way of getting information quickly."(CatF32)

Parents also referred to the environment/activities as information sources, including libraries (n=6), museums (n=5), art galleries (n=3) and the natural environment (n=3) but sometimes they also generated information need as

"they're not sources of information, they're more sources of questions…"(ZogM38)

 This focus on experiential activity as a source of learning was a commented on by six parents and was the focus for ISB.

6.1.5 Information seeking behaviours (ISB)

Children and parents displayed an approach to ELIS where the content or knowledge of a source was compared to the nature of the information need. This allowed them to prioritise their needs against source availability. Children's needs were generated by a variety of

situations, contexts and experiences, with two parents commenting on the constant nature of questioning (ZogM38 and KermitF36).

6.1.5a Situations and contexts

Parents referred to children's information needs occurring in a variety of situations, with most taking place within the home (n=7), while outside walking (n=4) or while driving in the car (n=3). Bedrooms were a location for six of the examples given, particularly bedtime (n=5) and KermitF36 reported that MickeyM5 now requests a book about pregnancy as "his bedtime story," due to his sustained interest in this topic. The use of bedtime to express information needs highlighted children's ability to tolerate delay as being critical to the resolution of ELIS need. If parents could not respond from their own memory/knowledge, or a quickly accessible resource, then children had to wait overnight for an answer. CatF32 referred to CatF5 as having lost interest due to delay created by this situation. The use of internal knowledge as a means of preventing delay was evidenced by all parents, and by both children and parents when identifying the need to access another source.

6.1.5b Evidence of internal memory use

One of the main information sources reported by parents was their own knowledge/memory (n_p=9, N_p=9). This was also confirmed by the results of the information literacy survey (n_s=35, Ns=39). It was initially thought that children would not discuss the instances where they resolved an information need internally from their own knowledge and parents may also be unaware of ELIS which does not involve the parent. Yet all of the children gave examples or demonstrated using their own internal knowledge and/or memory during the interview process. When her younger brother (CatM3) showed the interviewer toy bees, CatF5 displayed her existing knowledge of bees. When asked "how do you know that?" she responded "It's just in my head." CatF5 then confirmed that she uses her memory for "lots of things."

Despite being appearing distracted throughout the interview, LovelyF4 said, "Because I did it before. Because I did it at nursery at Hallowe'en time," while discussing how she had gained her knowledge of makeovers. This answer conflicted with PixieF47's interjection that they

look makeovers up online and showed that even the youngest child interviewed referred to her own knowledge before directing her information need to another source.

ZogM38 also commented that he felt that his son (BatmanM5) did not always express all of his information needs as

> "it seems to me that he holds back a lot as well- yeah he knows kind of instinctively some things that he shouldn't really ask because he might put us in an awkward position so he doesn't really ask"

evidencing Taylor's theory of compromised need (Taylor, 1968, cited by Wang, 2011, p.27).

Based on this internal assessment of the nature of the information need and their ability to respond from their own knowledge, both parents and children then decided which information source was best to use.

6.1.5c Prioritising information sources

Simply looking at things as a means of gaining information and resolving needs was mentioned by several children, with two looking at toys, three the natural environment, and three referring to looking at animals as

"you can look at [the dog] and see what she does and that gives you information." (WolfF7)

Once own knowledge or observation had been exhausted as a means of addressing need, children then sought information from other sources. Parents prioritised the use of people by comparing the information need with people's expertise (n=9,N_p=9) and using different people for different needs was the most common response to the question "How do you decide what to use?" (n=7, N=12). Three children also said that younger children should not be asked as they would lack knowledge.

Two of the older children (SheepF6 and WolfF7) were very focussed on computers as a source of information, only referring to parents when asked later, "which people would you use?" Older girls also referred to using friends as sources of information in social situations before using their parents (n=2), confirming that friends begin to out-weigh the influence of family as children grow older (Agosoto and Hughes-Hassel, 2005, p.153). This developing

independence was linked to increased abilities in IL, particularly core and digital literacy, with WolfF7 referring to being able to use the computer on her own for "research." But older children's independent searching still involved their parents, as adults controlled access to information sources;

> "if I need to find information it is quite easy to just hop and *ask mummy and daddy* if I can, I can get one of their computers and then research, or get a book from the library, or like to watch ... one of my DVDs, to find the information that I really want to find out about." (CoconutF7)

All parents first used their own knowledge as a means of responding to children's needs. They then used technology sources ($n=9, N_p=9$) or books ($n=9, N_p=9$) to source information, according to convenience/availability, or directed their child to another person. If the child could tolerate delay and sustain interest, parents would then use a place as an information source, such as libraries or museums. At any stage during the ELIS process the sources accessed could generate further information needs, most notably places. A child's sustained interest in a topic also affected their ability to generate new information requests on a similar theme. Ability to tolerate delay affected children's sustained interest and two children displayed long-term interest, despite their reported and expressed frustration at delays in achieving need resolution. The resulting model of ELIS (see Figure 3) resembled the models of Sice (see Figure 2) and Shenton and Hay-Gibson (see Figure 4) due to the impact of delay and unintended consequences on successful information need resolution, creating feedback loops. The main delay in children's ELIS resolution was the control of information flow by adults.

6.1.5d Information control and acceptable delay

Ten children reported that their access to information sources was controlled by adults, as even older children had to ask permission to use the computer. The researcher also observed that in three families this extended to books, as reference works were shared by the whole family, and so parents had to be asked first before using the item. This inability to access such items independently caused annoyance for two children, showing the effects of delay on children's emotional response. Three children also expressed frustration with delays due to the obligations of homework or family activities preventing ELIS. Six children,

Figure 3 Model of children aged 4-7yrs ISB

(including parental responses and control of access to information)
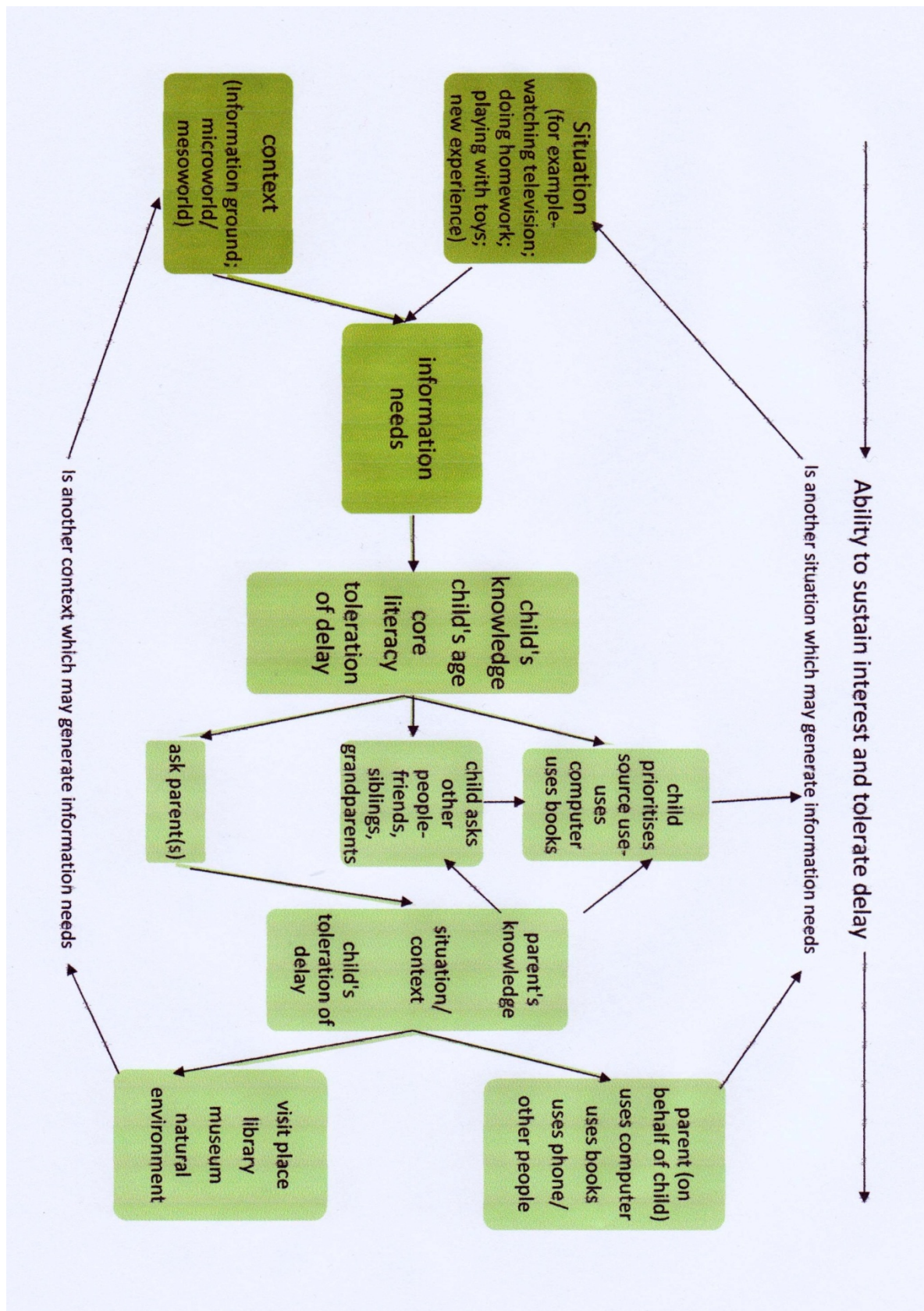
however, expressed an ability to tolerate delay in resolution of need, as the prioritisation of favoured activities caused them to abandon or delay a need. This toleration of delay could be long term as CoconutF7 gave as her first example the "bugs and beasties" nature diary competition of which BountyF43 later said "I think she's actually sort of forgot it a bit, she was a bit obsessive when we got it" despite a two month delay in need resolution.[6]

The importance of an ability to tolerate delay was confirmed by four parents mentioning their children's sustained interest in a topic, and three giving examples of their children tolerating deferred ELIS resolution, but three referring to their children being frustrated by delays. Three parents had noticed differences in learning styles between older and younger children; older children being more focussed on "facts" and "quick answers," and showing less concern if an issue wasn't resolved, whereas younger children tended to maintain interest over a longer period but were frustrated when delays affected their pursuit of that interest. Sustained interest was described as being part of "collecting" behaviour by PixieF47 and seven parents gave examples of their children's collecting behaviour as being a situation which generated information need and/or computer use, particularly the collection of toys or interaction with online gaming communities such as Club Penguin or Moshi Monsters. Online information sources, however, generated concerns among parents about appropriateness, causing them to increase information control.

6.1.5e Appropriateness and information control

Concerns about appropriateness caused parents to adopt a "fixer" style of mediating information for their children (Druin, et al., 2010, p.416). Six mentioned appropriateness of language or content as influencing source selection and four preferred "child friendly" sources. Five parents edited information before sharing it with their children, including the three parents dealing with questions about pregnancy. English literacy affected children's ability to access information without their parent's support, affecting both bilingual and mainstream educated children. Five parents described their children as being "visual searchers" and visual searching is utilised by children who have a lower developmental level than experienced, confident, "power" searchers (Druin, 2010, pp.417-8). Three parents used YouTube as an ELIS source for visual searchers, but all three parents had concerns about

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[6] BountyF43 confirmed that CoconutF7 successfully completed this project in August 2012 and that CoconutF7 maintained a degree of determination and focus throughout the summer holidays.

inappropriate content, causing them to take on a demonstrator role (Druin, 2010, pp.416). ZogM38 and PixieF47 both commented on cartoons which had been redubbed with inappropriate language and the subsequent need to control their children's access. This issue was resolved by a "fixer" method, with previewed, trusted material collated in a favourites section.

6.1.5f Trusting sources and children

Five parents' prior knowledge of websites/sources had an influence on source choice and trust was expressed as being important by four parents when assessing relevance of sources, reflecting the findings of Ooi and Liew (2011, p.748). Familiarity with organisations influenced trust (n=4), particularly the BBC (n=4) and RSPB (n=2). The BBC was trusted as it was possible to filter children's access to content both within the site (ZogM38) and via digital television controls (GiraffeF36). Trusting children to use ICT without filters was indicative of varying supervision styles. Five parents wanted to be mentors, supervising at a distance, but children's literacy meant that three used ICT on behalf of their child (fixers) and four also reported having no parental controls at present, as they sat at the computer with their child (demonstrators) (Druin, 2010, p.415). Two parents expressed a need to trust their children but two had increased security due to breach of trust by older family members. There is a danger though that such explicit removal of trust will create the trust gap between children and parents, which emerges in older children aged 8-12yrs (Meyers, Fisher and Marcoux, 2009, p. 319). Four parents were, however, considering increasing the parental controls on their technology due to the increased abilities of their children and this related to their children's increased independence due to core literacy and digital literacy tuition at school.

6.1.6 Digital literacy- Comparative assessment of ICT skills as a means of identifying self protecting behaviours.

Children and parents were asked to rate their ICT skills and responses were compared with the digital literacy assessment questions. This indicated the presence self protecting behaviours such as a lack of risk taking in sharing information (due to fear of exposure), deception, and social norms. The researcher was identifiable as a microworld insider

(Chatman, 1991, p446), being a parent with a child of a similar age, and this insider status may have engendered social norm and self protecting responses.

As previously discussed the same Likert scales were used by both children and parents

1	2	3	4	5
No skills	poor	average	good	excellent

giving a median score of 3. The mean for parent assessment was 3.444 (average to good) and for children's self assessment was 3.5. Children's assessment of their parents was mean 4.863 and parents' assessment of their children was mean 3.25. Actual ratings as collated from the responses to the ICT key skills questions gave a mean for parents of good (4.111), and for children average (3.041) (see Table 4).

Parents gave aspirational responses for their children as half (n=5, N_c=11) displayed lesser abilities than those suggested by their parents. Children correctly assessed their parent's IT skills (n=9, N_c=11), and five gave a more accurate assessment than their parents. Parents' and children's assessment of parental digital literacy is significantly different (t-test, p=0.004114723) as children think their parents have better skills than parents self assessments. This therefore demonstrates that young children aged 4-7yrs still trust their parents' abilities in ICT. Children did, however, display aspiration when assessing their own abilities, with six grading their abilities as better than those displayed by their knowledge. Four, however, displayed a much better knowledge than their self-assessment and, as the parents of the children who underestimated their abilities also underestimated their own abilities in interview (without the children being present), this suggested a social norm of modesty in their family microworld.

There was also evidence of self protecting behaviour in parents (n=6, N_p=9). MiaF45 attempted to deflect the skills assessment questions, despite reassurances from the interviewer and ZogM38 that she had already displayed a good knowledge. She was influenced by the social norms of her workplace mesoworld as she said she had lower abilities "compared to other people at work" and graded herself 3.5 despite having an ICT masters degree. MiaF45 and ZogM38 both underestimated their abilities but displayed excellent and above average responses respectively. They were the only parents who also

used online forums, and expressed utilisation of relevance criteria including currency, accuracy and quality (Barry and Schamber, 1998, p.227). This suggested that the researcher's role as a small world insider had provoked a response of modesty, the microworld social norm, as Druin (et al., 2010, p.415) found parents tended to estimate their skills as excellent. Of those six respondents who underestimated their own abilities, three also underestimated the abilities of at least one of their children contrary to the norm of aspirational assessment.

Table 4- Self assessment ratings and actual ICT key skill ratings for parents and children

(Median = 3 average)

	Parent self assessment	Child's assessment of parent	ICT key skills mean parent	Parent assessment of child	Child's self assessment	ICT key skills mean child
CatF32	4	3.5	4	3	1	2
RabbitM39	3	4	4	2	1	1
PixieF47	4	4	4	3	4.5	3.5
		n/a		n/a	n/a	3
DolphinF39	3.5	4	4	4	3.5	5
		5		3	1.5	3
MiaF45	4	5	5	4	3.5	2.5
ZogM38	2	5	3.5	4	3.5	2.5
GiraffeF36	4	5	5	4	3	3
		5		2	4.5	3
BountyF43	3.5	5	4.5	3	4	4.5
KermitF36	3	5	3	3.5	5	3
		3		5	4	3
Mean scores	3.444	4.863	4.111	3.25	3.5	3.041

6.1.7 Information literacy (IL)

6.1.7a Information literacy of parents

Only BountyF43 had heard of IL. Other parents all answered no to question 7a (see Appendix 2), however five then went on to describe digital literacy courses they had undertaken at work or in tertiary education. Six referred to IL courses in the workplace, five being digital literacy, three critical literacy and two cultural literacy. Five parents considered themselves self taught, all in digital literacy. This was due to the relatively recent proliferation of the internet as

"by the time I might have thought of going on a course ... I already knew how to use it" (CatF32)

Four parents received IL training while at university and two via digital literacy college courses. Three had received training in critical literacy, creating awareness that they had better skills and resources than other parents.

Six parents knew that their children received some sort of IL training at school, but those with older children had a greater knowledge. GiraffeF36 had a detailed knowledge of information law and school ICT classes. She had access to "outsider" knowledge (Chatman, 1996, p.197) as she was involved in parent's groups and bilingual organisations, giving her an increased awareness of policies and legislation. Her cultural literacy, however, came from her older children's IL curriculum, which included information sessions for parents.

Four parents expressed having difficulties in knowing what their children were doing at school as the children did not tell their parents. This theme of not knowing the content of the curriculum included PixieF47's comments that she felt disengaged from her child's learning once they attended primary school and even GiraffeF36 responded that she was not aware of her youngest children receiving IL tuition.

6.1.7b Children's experience of IL at school

When asked, "has your teacher taught you anything to help you find information?" five children said core literacy skills were important for accessing information and five mentioned aspects of digital literacy, including going to ICT rooms (n=2), typing search

terms (n=2) and using the internet (n=2). Five gave a response of "don't remember" or "don't know" suggesting that they failed to transfer that knowledge to the home microworld as

"I forgot cos it's been a long time since school cos it's the summer holidays" (HotdogM6)

Five children used IL outside of school, particularly digital literacy skills (n=4). WolfF7 was very conscious of her transfer of skills between school and home

> "because everyday you need to know things, you are always learning things, not just in school."

She also showed transference of cultural literacy from school to home, as she knew that "you are not allowed to copy from the internet." This displayed a degree of cultural literacy knowledge which surpassed that of many of the parents interviewed. Parents were also conscious that they sometimes lacked the knowledge required to deal with their children's homework (n=5, N_p=9) and there was therefore a role for information professionals to provide parents with the skills and knowledge to bridge those gaps.

6.1.8 Parents' and children's recommendations for improved library services

Children and parents had an opportunity to resolve their expressed skill and knowledge gaps by making recommendations for supports for ELIS. Children associated libraries with books and referred to "better books" (n=5) or the lending of books (n=4) but only five of the children confirmed that they currently visit the library. Too young to visit the library on their own, their access to the library was controlled by adults.

Six parents currently used libraries, however most were not happy with the standard of services. Six expressed a need for classes or activities for children in the 5-7 yrs age group, with three reporting a focus on classes for very young children aged 0-5 yrs. Four recommended more child friendly areas, with staff attitudes towards children causing concern for three parents, as

"they don't want noise- even if the children aren't being that noisy ... I'll say to the kids go and ask the lady or the gentleman and they don't want to be asked." (GiraffeF36)

Three parents referred to the quality of factual resources in their local library with PixieF47 commenting that

> "I find it difficult, like for instance just to find a book about flowers was really difficult. In [local] library [my daughter] couldn't find anything,"

This was also observed by the researcher during an investigation into the services of the same public library (Carter, 2012). Supports provided for older children focussed on homework classes (Glasgow Libraries, 2010a, 2010b and 2010c) or arts and crafts, but only behaviour management classes were targeted at all parents via that library service (Glasgow Libraries, 2010f), accentuating the gap between provision for parents and the IL school curriculum.

6.1.9 Homework Supports

During the first interviews two parents mentioned having homework/curriculum supports for parents, to enable them to assist their children's ELIS and IL at home. It was decided to add a question to the interviews where parents were explicitly asked "Would you want homework classes for parents to help you to support your children's information seeking?"

All eight parents whose children are in either bilingual or mainstream schools replied yes to this question. Six already had supports available for core literacy but all eight wanted a more extensive range of information, which would increase their knowledge of the wider curriculum and/or IL and BountyF43 was frustrated that digital literacy classes available at her local public library were restricted to particular age groups or the unemployed. Four of the parents had questioned their own abilities/skills when helping with homework and referred to the value of meeting other parents as

> "just going to the classes ... helps and I think,... just being in the school just lets you hear what's going on and you hear some of the other questions that parents have" (MiaF45)

Mutual support from other parents and better home/school links was mentioned by four parents. Six parents expressed a preference for shared, active, learning experiences when responding to their children's ELIS. This use of active learning styles also extends to available resources as parents expressed a need for sources to encourage

> "using the knowledge that you have to invent or create things yourself. So that ...,
> it's not just about having the information, it's about using the information."
> (PixieF47)

Yet despite six parents commenting that information needs were created by homework, few indicated ways in which information professionals could bridge gaps between their lack of knowledge of IL and the school curriculum. It was therefore necessary to quantify and qualify expressed needs by means of the information literacy survey.

6.2 Information literacy survey

39 participants undertook the survey (N_s=39), with 26 surveys completed in paper form and input via manual data entry, and thirteen completed as an online survey. Survey Monkey automatically generated statistics for responses- however the open questions (what is information literacy? and occupation) were coded by the researcher by similar responses being grouped together. The wording of those categories was generated by the content of the responses themselves (i.e. the "understanding information" category was created as that wording was common to multiple respondents).

6.2.1 Demographic information

6.2.1a Sex   29 respondents were female and ten male. This ratio of 74.359% female : 25.641% male is similar to the parent interview participants (77.778% : 22.222%).

6.2.1b Age   Four were aged 21-29yrs; fourteen 30-39yrs; nineteen aged 40-49yrs; one over 50yrs and one over 60yrs of age.

6.2.1c Family size

One person gave no response and four did not have children. Twelve respondents had one child; twelve 2 children; eight 3 children and two 4 children, giving 34 respondents with children (N_{sp}=34). 29 respondents' had children aged 4-7yrs, making it possible to delimit the results to the target population of this study.

<u>6.2.1d Occupation</u>

Ten respondents were homemakers but, like the interviews, some also gave an additional occupation status. There was again a predominance of respondents with professional occupations (n=21), mainly teaching/lecturing (n=8) and medical and allied health professionals (n=6); four were employed in the financial sector. Of the other parents, three were administrators, two employed in construction, one in catering, one sports instructor, and one self employed. Four respondents were students, one carer, one unemployed, one undertaking voluntary work, and one was retired. The predominance of women, over 30s and those in professional employment is similar to the interviews and therefore it is possible to quantify the interview findings with the results of the survey.

<u>6.2.2 What is information literacy?</u>

All of the respondents answered question1 and only five gave a "don't know" response. Of those who attempted an answer, the response

"know where to get information and being able to understand and use it"

is typical. Respondents gave a combination of accessing information (n=18); knowing how to use information (n=18); or understanding information (n=16). This combination of knowledge and understanding combined with an ability to access information is similar to the CILIP definition of information literacy as adopted by this study, i.e.

"knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner." (CILIP, 2012).

This differs from parent and child responses regarding IL, where the focus was very much on digital literacy, however the responses to questions two, five and six (see Appendix 3) showed that digital literacy is still a focus for most people (see below Tables 5, 8 and 9). Fourteen people mentioned that IL encompasses a wide range of information sources or media, and this was reflected in the responses to the information source questions.

6.2.3 Information Sources

All respondents answered question 2 and 3 (N_s=39) (Appendix 3) and multiple responses could be selected for question 2 (see Table 5).

6.2.3a Similarity to interviews

Question 2 confirmed the interview findings that adults use their own knowledge/memory when confronted with an information need (n_p=9, n_s=35) (see Tables 3 and 5). The most popular response was, however, "websites" (n=36) and 35 used search engines such as Google/Bing, confirming the preferences of parents and children in interview ($n_{pgoogle}$=7; $n_{cgoogle}$=6).

6.2.3b People

35 also mentioned people as a source, with friends (n=21) and parents (16) being the most popular. Thirteen used a professional to source information; ten a teacher/lecturer; nine a sibling and eight other family. It is not possible to determine from the survey responses whether the parents used were the respondents own parents or other parents, but the responses corroborate the increased use of friends as people grow older (Agosto and Hughes-Hassell, 2005, p.153).

6.2.3c Items

Items frequently mentioned by respondents were books (n=27, 69.2%); leaflets (n=21); newspapers (n=18); maps (n=17); television (n=14); SatNav (n=14) and magazines (n=11). This confirms the interview responses for books, newspapers and television (see Table 3), although leaflets were not mentioned by parents interviewed.

6.2.3d Places

The mesoworlds with which the respondents had contact included libraries (n=12) and council departments (n=8); community centres (n=3) and health centres (n=3). This suggests that libraries and council departments should be a focus for information provision for parents, however this was not borne out by other results (see below pp. 61-3).

Table 5- Information source use by survey respondents

Source used	Number of respondents using source
Own knowledge/memory	**35 89.7%**
People	**35 89.7%**
Friends	**21 53.8%**
Parents	16 41%
Professional (doctor/lawyer, etc)	13 33.333%
Teacher/lecturer	10 25%
Brother/sister	9 23.1%
Other family	8 20.5%
Websites	**36 92.3%**
Search engines (yahoo/google/bing, etc)	**35 89.7%**
Databases	4 10.3%
Television	14 35.9%
Mobile phone	**25 64.1%**
Phone	10 25.6%
Books	**27 69.2%**
Leaflets	**21 53.8%**
Newspapers	18 46.2%
Magazines	11 28.2%
Maps	17 43.6%
SatNav	14 35.9%
Library	12 30.8%
Council department	8 20.5%
Community centre/project	3 7.7%
Health centre	3 7.7%

6.2.3e Phone usage (see Table 6)

The question regarding mobile phone use was answered by all respondents (see Table 4). The mean response of 3.744 was similar to the parent interviews, as people either used their phone frequently or not at all. More survey respondents, however, used their phone daily (n=18) or weekly (n=11) but only nine never used their phone for ELIS. 30 people used their mobile phone for ELIS but only 25 people said they used their mobile phone in question two. This suggests that some respondents had used their mobile for information seeking purposes other than ELIS, however, interview respondents mentioned calling or texting (n=3) instead of phone internet use. Teenagers use their mobile phones for ELIS by calling or texting (Agosto and Hughes-Hassell, 2005, p150) and ten respondents also used their landline phone for ELIS, confirming that respondents use phones to call others.

Table 6- Usage of mobile phones for ELIS (N_s=39; median 3)

Never	Every 2-3 months	Once a month	Every Week	Every Day
1	2	3	4	5
9 (23.1%)	0	1 (2.6%)	11 (28.2%)	18 (18%)

6.2.4 Information literacy

6.2.4a Self assessment of IL skills (see Table 7)

All respondents answered question 4 rating existing IL skills (N_s=39). The mean response varied across the literacies with an overall mean of 3.769 (median 3/average), and core literacy had the highest mean value (4.333). Critical literacy's mean was 4.103; digital literacy 3.897 and media literacy 3.872. Cultural literacy/Information law had the lowest mean of 2.641 (poor to adequate). Cultural literacy also had sixteen respondents giving themselves a poor score and yet this was not seen as a priority for respondents when expressing information literacy needs (n=17 for question 6).

Table 7 Survey self-assessment of Information literacy skills (N=39)

Mean overall score= 3.769

	No skills	Poor	Adequate	Good	Excellent	Mean	Total responses
Computer/IT Use	0	2 5.128%	10 25.641%	17 43.59%	10 25.641%	**3.897**	39
Communication (reading/writing)	0	0	5 12.82%	16 41.026%	18 46.154%	**4.333**	39
Finding and assessing useful information	0	0 0%	7 17.949%	21 53.846%	11 28.205%	**4.103**	39
Accessing and using media	0	1 2.564%	11 28.205%	19 48.72%	8 20.513%	**3.872**	39
Information law (including data protection and copyright law)	3 7.692%	16 41.026%	14 35.897%	4 10.256%	2 5.128%	**2.641**	39

6.2.4b Sources of information literacy training/experience (see Table 8)

All respondents answered to question five(N_s=39). Multiple answers could be selected for the source of IL support or training in each of the five key information literacies.

The majority of respondents gained their skills in core literacy at school (n=34). Sixteen had received training/experience at university; twelve through work; ten through college and five via a library. Seventeen, however, considered themselves self taught and all of the respondents had received training/experience in core literacy.

All of the respondents had received training/experience in digital and/or critical literacy. 37 had experience in media literacy but only 33 had experience of cultural literacy/information law. This survey confirmed the parent interview responses and Julien and Hoffman's (2008, p31) findings that people consider themselves self-taught in IL as this was the most popular response for digital literacy (n=29); critical literacy (n=28) and media literacy (n=28).

Table 8 Existing training and supports in information literacies (N=39)[7]

	Information law (Data protection /Copyright law)	Accessing and using media	Finding and assessing information	Communication (reading/writing)	Computer/ IT Use
Work	**14 42.424%**	**13 35.135%**	**20 51.282%**	12 30.769%	**23 58.974%**
School	0	10 27.027%	15 38.461%	**34 87.179%**	11 28.205%
College	4 12.121%	4 10.811%	8 20.513%	10 25.641%	8 20.513%
University	5 15.152%	**13 35.135%**	18 46.154	16 41.026%	12 30.769%
Library	2 6.061%	5 13.514%	11 28.205%	5 12.821%	4 10.256%
Self -taught	**13 39.394%**	**28 75.676%**	**28 71.795%**	**17 43.59%**	**29 74.359%**
Other	3 9.091%	0	1 2.564%	3 7.692%	3 7.692%
Total respondents	33 84.615%	37 94.872%	39 100%	39 100%	39 100%

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[7] Jobcentre/employment service and community centre/project have been removed from results table due to high number n=0 or n=1 responses

For digital literacy 23 had gained experience/skills through work; twelve university; eleven school; eight college and four in a library.

For critical literacy 28 were self taught; 20 had experience/training via work; eighteen via university; fifteen via school; eleven via a library and eight via college.

For media literacy 28 of 37 respondents were self taught; thirteen had received training/experience via university; thirteen work; ten school; five libraries; and four college.

The only exception was cultural literacy. Less people had experience or training (n=33) and most had received that training at work (n=14). Thirteen were self taught; five had training/support at university; four college; and two in a library (6.1%). None of the participants had received training at school, however this confirms the relative newness of IL as part of the curriculum.

Of those respondents who gave other sources of support/experience, predominantly people were mentioned (n=7) including parents; friends; family and a spouse.

The small numbers for library use correlates with the responses given in the interviews and being self-taught or the workplace have been the main sources of IL support/training across all of the literacies.

6.2.4 c Expressed needs for information literacy support and training (see Table 9)

Only 35 respondents expressed a need for future support/training (n=35, N_s=39). In addition to selecting a location for support/training in the five key information literacies, respondents were also asked if they would like homework support for parents. This was to quantify and expand upon the expressed needs of the parents who took part in interviews.

30 confirmed an expressed need for homework support for parents (n=30, $Ns_{parents}$=34). The preferred location for this support was the school (n=21). Of those giving an answer "other" (n=5) all referred to the school in their answer. Sixteen prefer support via learning at

Table 9 Survey respondents expressed needs for future IL support/training (N=35)[8]

	Homework support for parents	Information law	Accessing and using media	Finding and assessing useful information	Communication (reading/writing)	Computer/IT Use
Work	1 3.333%	6 35.294%	1 9.091%	1 7.143%	3 25%	10 47.619%
School	21 70%	0	0	0	0	0
College	2 6.667%	4 23.529%	3 27.273%	4 28.572%	3 25%	5 23.81%
University	0	0	1 9.091%	1 7.143%	1 8.333%	1 4.762%
Library	6 20.0%	5 29.412%	0	3 21.429%	2 16.667%	2 9.524%
Community Project	6 20.0%	1 5.882%	0	1 7.143%	1 8.333%	2 9.524%
Learning at home /distance learning	16 53.333%	9 52.941%	6 54.545%	7 50.%	7 58.333%	6 28.571%
Total	30 85.714%	17 48.571%	11 31.429%	14 40.0%	12 34.286%	21 60%

[8] Jobcentre/employment service and other have been removed from results table due to n=1 or n=0 responses

home/distance learning; six in a library and six in a community project (20.0%). Yet school was not mentioned as a possible location in any of the other categories, suggesting that the link between information literacy (as represented by the five key literacies) and the curriculum (as represented by homework supports) was not being made.

21 respondents wanted digital literacy support/training, with work (n=10); at home (n=6) and college (n=5) the most popular locations. Only two people said that they would like digital literacy training in a library. This concentration on digital literacy as being synonymous with IL was also found in the parent and child interviews, with respondents concentrating on digital and core literacy skills in their responses. This also evidenced digital literacy as being a social norm as respondents had higher reported abilities in this area (mean 3.90) yet still requested training.

Due to the general level of confidence in core literacy (mean 4.333) fewer people indicated a need for further training/support (n=12). Seven wanted this training at home or via distance learning, suggesting that they wished to use a method with which they were comfortable. Locations out with the home, such as work (n=3), college (n=3), or the library (n=2) were not popular.

Seventeen respondents wanted more support/training in cultural literacy, despite this category having the poorest mean ability (2.64). Nine wanted this training to take place at home suggesting that this method is more accessible and convenient. Six wanted to receive training/support in work, reflecting the social norm of this being the place where most people had already received training. Five wanted support/training via a library.

Fourteen people indicated a need for critical literacy training and eleven in media literacy. This correlates to good to excellent and average to good mean scores in self reported abilities, respectively. Again learning at home is preferred for both (n=7 and n=6). Many of the respondents are parents who also work and they may wish to pursue home learning as it fits with their busy schedules. This was not the case, however, with homework classes, where they were willing to make time to attend classes in their child's school. Work was chosen as a location for training/support in critical or media literacy by few respondents (n=1, n=1), suggesting that social norms are evident in the results. Few parents and children gave evidence of a detailed knowledge of cultural or critical literacy during the interviews,

yet this similarly did not transfer into expressed needs. Yet without the evidence of expressed needs, how are information services able to best direct their (often limited) budgets and supports towards those displaying a need through lack of assessed skills (in this case most notably information law/cultural literacy)?

6.3 Evaluation of interview and survey findings

The interview findings led to the creation of a model of children and parents' ELIS (Figure 3). Parents used experiential learning methods and were enthusiastic about their children's development of ELIS behaviours and skills, but most children had their access to information sources controlled, due to limited core English literacy. Parents lack of knowledge of IL (as contained in the taught curriculum) may have been due to the young age of the children, yet most were concerned that they needed to know more as their children grew older. Appropriateness of available information was important to parents (n=6) and this was reflected in an awareness of cognitive and situational relevance (Saracevic, 1996, p.12) of information to their children's abilities and needs.

The interviews also confirmed that some self protecting behaviours and social norms exist when reporting digital literacy. It was therefore necessary to further quantify interview findings, and so the information literacy survey responses were analysed to delimit the findings to a larger sample of participants.

The interview participants had a very limited understanding of IL, including the school curriculum. Those surveyed, however, did display a degree of understanding of IL and their use of information sources reflected those of the families interviewed, using own memory, ICT resources, people and books. The demographic information provided, and the correlation of sources used, suggested that survey responses could be delimited to a general population of families containing children aged 4-7yrs.

Despite the anonymous nature of the surveys, most respondents were modest in their IL skills ratings (overall mean 3.768; average-good) confirming this social norm found in the interviews. There was also evidence of the overlapping nature of the micro- and mesoworlds experienced by participants, with different locations being seen as more

appropriate for support/training in different literacies, according to social norms. The popularity of home/distance learning suggested that survey participants were more comfortable with supports of this nature having been self taught in many categories, yet it was acceptable to receive homework supports at school and digital literacy training at work. Libraries were not a preferred location, meaning that information professionals need to be more creative in their approach to supports/training for IL and ELIS, as most of the council websites reviewed placed the (mainly core and digital literacy) supports that they had within libraries.

The request for distance/home learning could be supported via the development of online resources, as both interview and survey participants used ICT for ELIS. Schools are also a recommended location for homework supports, including IL, due to the survey responses. The low levels of knowledge regarding cultural literacy displayed by both interview and survey participants suggested that this should be a priority for training/supports offered, despite the low level of expressed need in the survey. Many of the parents interviewed shared concerns about how to best monitor and support their children's ELIS online, but none of the interview participants, and less survey respondents, asked for cultural literacy training. Digital literacy of users can be compounded by a reluctance to risk exposure of difficulties by seeking help and this extends to the use of help functions when searching online (Xie and Cool, 2008, p.478). Lack of expressed need should therefore not be a barrier to support provision, as self protecting behaviours and social norms may have prevented participants from expressing need.

CHAPTER 7 LIMITATIONS

Only eight families (nine parents and twelve children) were interviewed. Qualitative case studies, however, tend to be small and "theoretical saturation" generally appears during the coding of the fourth or ninth respondent (Gonzalez-Teruel and Abad-Garcia, 2012, p.33; Barry and Schamber, 1998, p.222). In the case of this study theoretical saturation was evident in child responses by interview five (seven children interviewed) and in parent responses by interview seven (eight parents interviewed). It was an unintended consequence of convenience sampling that the majority of children interviewed were in receipt of bilingual education (four bilingual, three mainstream, and one home schooling family- also bilingual). This caused theoretical sampling to focus on parents with children in bilingual education when distributing the survey, in order to quantify the findings as representative of the experience of bilingual families.

The survey and interviews also had a predominance of women (n_p= 7, N_p=9; n_s=29, N_s=39); adults aged 30-49 yrs old (n_s=33, Ns=39; n_p=9, N_p=9); and with professional training (n_p=8, n_s=21). Some of the professionals surveyed were teachers (n_s=8) giving them access to outsider information regarding IL. Despite this few parents and survey participants reported skills in cultural literacy, suggesting that even teaching staff lack knowledge of this aspect of IL. It is therefore recommended that the parent interview or general survey should also be undertaken by teaching staff to see if they too lack IL skills necessary for supporting children's ISB.

Teacher/lecturer featured frequently as a source for those who undertook the survey during the family learning week, where the parents were in direct contact with tutors in an ELIS situation. This, however, helps to show the value parents place on tutor input when supporting their children's ELIS and core literacy.

There was also a bias towards older children, particularly those in mainstream education which had a ratio of four older : one younger (for aged over 6 : 5 and under) whereas for bilingual children the ratio was three older : four younger. To substantiate findings it is therefore recommended that more children aged 4-5yrs in both bilingual and mainstream education households are interviewed to confirm whether the age of the children affected

their responses, as core English literacy skills have been shown to be essential for the development of independent ELIS.

The participants' self reports were retrospective and therefore subject to error (O'Brien, 2011, p. 75) and the identity of the researcher as a micro/mesoworld insider (parent with child aged 6yrs) may also have affected responses to the interviews. It did allow for increased trust and empathy when interviewing respondents, especially children, however the researcher is aware that the microworld social norm of modesty when reporting abilities has not been supported by other studies (Druin, et al., 2010, p.415; and Julian and Hoffman, 2008, p.22). The ICT skills assessments are therefore offered as evidence of social norms and not as the actual abilities of the respondents, as this would require observation of task related behaviour. This method was not utilised in this survey, however, as this would have limited participant reporting to a particular situation, and it was the intention to collect data on a wide range of ELIS behaviours.

CHAPTER 8 DISCUSSION

8.1 Do children aged 4-7yrs and their parents display signs of self-protecting behaviours?

The questions designed to assess self protecting behaviours of deception, risk taking and social norms showed that aspirational reporting was present when parents and children discussed each other's ICT abilities. As those surveyed were willing to assess themselves as having poor skills in the area of cultural literacy, this suggests that a degree of deception was being utilised as interview participants did not wish to risk exposing lack of skills to the researcher. This was similar to Shenton's experience of working with older children, where lack of trust affected responses (Shenton, 2007, p279). In this case, however, the identity of the researcher as a shared micro/mesoworld insider (as a parent with a child aged 6yrs) also affected responses as parents instead conformed to the social norm of modesty when assessing their own ICT skills.

One child (HotdogM6) used the question about other children to refer to using ELIS to resolve anxiety, saying that *another child* may "feel nervous" about doing something and therefore seek information to help. This reference to "others" as a way of discussing information needs was also shared in parent interviews in the category "other parents may need support," where four parents discussed needs in terms of others having lesser knowledge and/or experience than themselves. This suggested a level of self protecting behaviour, where educated parents and HotdogM6 did not want to risk exposure of a difficulty (Chatman, 1996, p.198) and therefore instead expressed needs using the social norm (Chatman, 1999, pp.211-2) of referring to the needs of others, even when parents themselves had already expressed difficulties with helping with homework (n=5, N_p=9).

This therefore supports the hypothesis that children and parents ISB may be affected by the self protecting behaviours of the family as a microworld.

8.2 What differences are there between families' ISB and the school curriculum?

The "Curriculum for Excellence" by its' very nature concentrates on purposeful ISB in response to imposed questions. It focuses support/training for information seeking skills on IL, particularly critical and digital literacy (Scottish Government: Smarter Scotland, et al., [unknown a] and [unknown b]). This focus on IL uses terminology which was not recognised

by parents interviewed. Survey respondents were able to give an answer, but many were teachers and therefore exposed to the curriculum definition (n=8).

The model of children and parents' ELIS created from the interview responses (see Figure 3) places a focus on toleration of delay as being a contributory factor to children's assessment of information need and source relevance. Purposeful acquisition approaches, however, focus on Kuhlthau's toleration of uncertainty (Johnson, 2009, p.598), yet young children are still developing symbolism for constructs via naming things and so uncertainty is constant. It was children's lack of toleration of delay which meant children and parents used their own memory or quickly accessible sources in response to ELIS needs. This toleration of delay and use of feedback loops to resolve additional needs generated by actions was also evident in Shenton and Hay-Dixon's model of children's ELIS (figure 4). Young children (and their


Figure 4 Information seeking model based on systems thinking approach

(Shenton and Hay-Gibson, 2011, Figure 2, p.63)

parents) appeared to be experiencing cognitive dissonance (Gross, 2001, p. 361), most notably in the discussion of spirituality, and in the generation of expressed needs through contact with information mesoworlds.

8.2.1 Micro- and mesoworlds

Three of the parents interviewed discussed the impact of mesoworlds, on their children's knowledge and ELIS, in contrast with those of their family microworld;

> "because at first his whole world was like the house, or, and soon as we used to get up to [the park] that was the end of [the area], and now he's been to quite a few more places he's like- ...- is that still in Glasgow?...because he's aware that Glasgow's not the centre of the universe or Glasgow is not the universe."(PixieF47)

Six of the parents also referred to information needs being generated by exposure to situations or contexts, and three to new experiences impacting on their children's expressed needs as

> "in the home environment... he's more likely to be asking questions about things that we do know about... but the more he's out and about the more he comes home with ..." (MiaF45)

This extended to contact with the mesoworld of primary school, with six parents referring to the impact of the curriculum and/or homework on their children's ISB, despite the explicit focus of the interviews being ELIS. This impact was most notable for parents through homework, being the main source of contact with the school. PixieF47 expressed her concerns about the home/school relationship and its clash with the social norms of her family's microworld saying

> "then they go to primary school, the big door closes, and all that you know is what you are getting in his homework home, ... it's difficult to have this same relationship, to have the same feeling that what [he] has learned outside the school is being taken into the school... in nursery they were, "books are brilliant!" and then they go to school and it's not about the book, it's about learning how to read..Why? Why? These are seen as two different actions?"

This evidenced differing values between home and school. There were gaps between the experiential learning for pleasure, practiced as a means of meeting ELIS needs in the family microworld, and the purposeful acquisition of information in response to imposed questions

as taught in the school mesoworld. This idea of "information as *experience*" (O'Brien, 2011, p. 70) emphasises emotional as well as cognitive and behavioural values of ELIS (ibid, 2011, p74), yet the school curriculum focuses on developing cognitive and behavioural skills. This then supports the hypothesis that gaps exist between ELIS behaviours and the school IL curriculum.

Should a child consistently experience disappointment when using a particular person or source, this further restricts their ability to tolerate delay as "the time horizon is restricted to the immediate present; it is felt that investments in the future are not viable because recurring disappointments are more probable than experiences of success" (Savolainen, 2006, p.113). This lack of a long term view and a developed loss of trust in a more powerful information provider is characteristic of information poverty (Chatman, 1991, p.440) therefore gaps in parents knowledge or skills which lead to children's disappointment or frustration can increase the likelihood of children developing information poverty as they begin to mistrust their parents ability to deal with their needs. These gaps not only include differences in ISB, but also parents abilities to meet their children's needs as they do not have the same IL skills suggested by the taught curriculum.

8.3 <u>What differences are there between children and parents IL skills and those promoted by the school curriculum?</u>

The "Curriculum for excellence" describes literacy as

> "the set of skills which allows an individual to engage fully in society and in learning, through the different forms of language, and the range of texts, which society values and finds useful" (Scottish Government: Smarter Scotland, et al., [unknown a], p.1).

This is a holistic view of literacy which encompasses core and cultural literacy. The curriculum focuses on the attainment of "critical literacy" (ibid, [unknown a], p.3) and includes digital and media literacy recognising the "increased use of multimodal texts" (ibid, [unknown a], p4). The curriculum therefore includes all of the key literacies investigated by the interviews/survey.

The key difficulty which parents had with the curriculum was, however, that they did not know what it was, as most initially answered "no" to the question about information literacy training in the interviews (n_p=8). Survey respondents did show a basic understanding of the concept in their answer to "What is information literacy?" however there were eight teachers participating in the survey and their curriculum knowledge may have affected the popularity of "know where to get information and being able to understand and use it" as a response. Survey respondents, however, did not appear to make a connection between the information literacies mentioned as being a form of homework support, as most wanted unspecified "homework classes" in the school (n_s=21; N_s=30) but none wanted critical or cultural literacy classes in schools (n=0, N_s=14: n_s=0,N_s=17). This is despite key attainment levels in the curriculum focusing on critical or cultural literacy skills such as "finding and using information,""understanding, analysing and evaluating" or "recognis[ing] when it is appropriate to quote from sources... I can acknowledge my sources appropriately" (Scottish Government: Smarter Scotland, et al., [unknown b], pp.4, 5 and 13).

The interviews and survey showed that adults and children aged 4-7yrs focus on IL as digital literacy, with few parents referring to critical, cultural or media literacies during interview. Children similarly focussed on ICT skills, with only one mentioning cultural literacy. Children did, however, provide evidence that they were transferring skills learned at school to their ELIS; as older children preferred Google, were able to search more independently due to increased core and digital literacies; and began to use ICT sources instead of parents. The increased independence in older children's ELIS caused concern for parents. They worried about the need to filter children's access to information, but most did not know how to do this (this lack of cultural literacy was also supported by survey responses). Yet any adult behaviour which infers a lack of trust in turn affects children's trust of adults (Meyers, Fisher and Marcoux, 2009, p319) and parents wanted to trust their children's ICT use, supervising at a distance as mentors (Druin, 2010, pp.418-9).

Young children's lack of core English literacy skills, however, forced parents to undertake fixer roles, particularly families experiencing bilingual education. A lack of available resources in the additional language meant parents searched on behalf of their children

until a later age. Druin (et al., 2010, p419) suggests that this fixer role encourages less developed searching styles in children, and even older bilingual children were still developing, domain specific or visual searchers.

Dresang's (1999) paradox was evident as children with poor skills were expected to help parents with poorer skills, while children instead expected support from their parents (Dresang, 1999; quoted by Madden, et al., 2006, p745-6). The significant difference (t-test p=0.004114723) between parents' and children's assessment of parental digital literacy demonstrated that very young children still trust their parents' ICT abilities and therefore expect parents to support their ELIS. Yet adults' reported lack of cultural literacy meant that gaps exist between their knowledge, older children's knowledge, and the skills taught in IL lessons at school, regarding copyright and internet safety. Lack of knowledge of the nature of IL curriculum accentuated this, and expecting children to fill gaps in information, as suggested by Parentzone (Education Scotland; Foghlam Alba, [2012]) contributed to the IL paradox. Parents did display gaps in their knowledge and skills set, particularly cultural literacy, and were concerned that as their children grew older they would be less able to meet their ELIS needs. This then supports the hypothesis that gaps exist between the IL abilities of parents and the expectations of IL attainment in the school curriculum.

This also affected children's ability to trust their parents as a relevant information source, as evidenced by older children preferring to consult Google or friends. Gaps in parents' IL are therefore affecting the ELIS behaviours of their children, through the adoption of "fixes that fail" strategies (Shenton and Hay-Gibson, 2011, p. 59) where the sources used by necessity are not always the ones which will provide relevant or useful information. An inability to reinforce the IL curriculum in the home not only affects trust and future use of parents as an information source, but also affects the ability of parents to reinforce IL skills in an ELIS context. This gap was evident in younger children (5 year olds) who said that they did not transfer their IL skills to the home. Enabling parents to bridge these gaps by giving them the skills to reinforce the IL curriculum is therefore a main recommendation of this report.

<u>CHAPTER 9 RECOMMENDATIONS- What can information professionals do to support parents in overcoming these gaps and to support children's ISB?</u>

The limited nature of the study samples (N_p=9, N_c=12, N_s=39), the predominance of parents who had received tertiary education, and of children in bilingual education, meant that the results are representative of that group and not the needs of a wider population. Two families however (one bilingual, one mainstream) mentioned older children undertaking a history project, and both used older people in their community as sources of information about real life experiences. These children attended schools in different education authorities, yet their similarity of experience and of ISB suggests that the study findings may be extended to a wider population. It is therefore recommended that further research be undertaken to quantify the results, particularly parents whose age and education have given them different experiences of information seeking. Parents commented that they had a better general knowledge and access to information, therefore it would be interesting to assess if parents with lesser abilities still use their own knowledge first, as more survey respondents used websites than their own knowledge/memory. Others may even avoid questions which they are unsure of answering (like MiaF45). This would add to delays in ELIS resolution and, as previously discussed, impact on children's ability to trust their parents as a source, but at a much younger age.

Survey respondents were also mainly professionals, but the teachers who responded indicated a lack of cultural literacy. Older children predominantly gave "Google" as a source, but only one parent said that this was due to school instruction (KermitF36). It is therefore recommended that the children's teachers should also undertake the survey or parent interview, to clarify where children's ISBs were developed and identify if teachers also lack skills to support children in the relatively new IL curriculum. Thorvaldsen's (et al., 2011, p.315) key ICT task questions successfully helped to confirm actual abilities of parents and children and to highlight variations between reported and actual skill levels. It is therefore recommended that future research should include this comparative method to assess teachers' skills and self-protecting behaviours, as this would also affect their willingness to receive support or training in IL.

There were differences between young children's ELIS, where access is controlled by parents and toleration of delay affects information need resolution, and the curriculum's focus on purposeful, longterm ISB processes. A common feature of both is, however, the assessment of relevance and appropriateness when addressing information needs through prioritising source use. It is therefore recommended that critical literacy skills are promoted outside the academic setting to children and parents, particularly an understanding of accuracy, currency and credibility as this was mentioned by parents in interview. This will enable children and parent's quick fixes to become more successful fixes and not fixes that fail. Quick fixes (and answers) could be made available via mobile phone applications linked to popular children's information needs such as "finding out about the world" or the natural environment, however use of phones for ELIS showed a dichotomy between daily dependence and not at all.

It was not the intention of this research to ensure theoretical fit between findings and any particular model or theory, however the model of ELIS generated by interview descriptions of ISB does show similarities to Shenton's work, particularly use of own memory and identification of source (Shenton and Dixon, 2005, p.11); restrictions to access (Shenton, 2007, p.283) and toleration of delays (Shenton and Hay-Gibson, 2011, p.59). Shenton studied older children educated in Northern England, but his studies focussed on those in mainstream education. The similarities once again suggest that this report's findings could be applied to a wider population of children aged 4-7yrs and their parents. It is therefore recommended that further testing of the model be undertaken with a wide range of families, to confirm that the model applies to other minority languages or for children in mainstream education.

The differences between bilingual and mainstream educated children were due to delays in core English literacy. In this study the additional language was a minority language with few factual resources available. This included both online and "traditional" book and leaflet resources. To enable children to develop power searching, and reduce their time spent as developing searchers, it is recommended that more materials be made available in their additional language. The Curriculum for Excellence suggests that children should be able to "explore the richness and diversity of language" and that "[t]he languages of Scotland will include the languages which children... bring to the classroom" (Scottish Government:

Smarter Scotland, et al., [unknown b], p.1). This is not possible if the materials available to support children's ELIS are in English. RabbitM39 expressed his frustration at no longer being able to access resources in his first language due to restrictions to membership of a local university library. It is therefore suggested that if economic restrictions prevent public libraries ([BBC News], 2010) and schools from meeting the resource needs of bilingual families, then a role exists for academic libraries to support ELIS.

The development of accessible, more visual materials was also suggested by parents as this allowed them to act as mentors rather than fixers and promoted independent learning in their children. Parents were concerned about the availability of materials which were inappropriate in content, and many mentioned the need to balance trust and child safety. This could be addressed by giving parents more information on how to deal with cultural and digital literacy concerns, and how to support their children's development of critical literacy, allowing them to trust their children to seek information independently. The survey and interview responses suggested that any support/training be given online or within schools and it is recommended that leaflets and parent newsletters containing information about IL, and its' part in general ELIS, be created and distributed both via schools and online, in a manner similar to North Lanarkshire council (2011)a). None of the parents interviewed mentioned Parentzone (Education Scotland: Foghlam Alba, [2012]), GLOW (Education Scotland: Foghlam Alba, [unknown c]) or Get Safe Online (Cabinet Office; UK Government, et al., 2012) therefore better promotion of existing resources would also improve parents' knowledge of available supports. Training should also be provided, such as the cultural literacy sessions experienced by Giraffe F36, but within the school environment.

There is a role for information professionals and school librarians (Harvey II, 2007, pp.25-27) to use their knowledge of information literacies to deliver of these sessions. CatF32 comments indicated that she did not know about the changes to legislation regarding cookies (Information Commissioner's Office, [2012]) as she was going to install online parental controls to deal with the associated increase in pop-ups. This information could be easily provided to parents by school or children's librarians via the school website or through an information session in a school library. Parents also commented on the standard of non-fiction materials available in their local libraries and it is recommended that better links need to be made between public libraries and schools to ensure that available books

meet the needs of homework topics, and that factual resources are appropriate to the needs of young children who are in the process of constructing meanings for their world through ELIS. "Better books" was the expressed need of the children interviewed, although two children asked for better website accuracy (WolfF7 and MonkeyM6).

Parents commented on the availability of good family learning experiences for very young pre-school children, but the review of council websites confirmed parents' comments that gaps existed in provision for children aged 5-8yrs. Some families had reduced their library use as it was no longer a social experience for their child (ZogM38) and many parents commented on a lack of a "child friendly" environment. The main recommendation expressed by parents was that staff have to become more willing to listen to children, to answer children's requests with patience, and to understand that young children's ISB is negatively affected by unnecessary delays.

Some information professionals view children's ELIS as a difficult topic, as children's lack of communication skills makes them unreliable respondents, and so adults continued to be gatekeepers to children's ELIS, in the role of reporting on the ISB of children. The researcher did experience difficulties in eliciting responses from some children, however patience, tolerance, a willingness to listen and to emphasise that everything children said was important (even when their parents thought it was irrelevant), did produce data on children's ELIS. Without including children there would have been no evidence of children's use of their own knowledge/memory, or the way in which they prioritise sources and how their preferences change as they grow older. Interviewing children was challenging, but it was enjoyable too, it is therefore recommended that other researchers also involve children in their research, to enable information professionals to grasp the nettle of understanding children's ELIS.

CHAPTER 10 CONCLUSION

The results confirmed that gaps exist between the experiential learning undertaken by families and the IL curriculum. Parents did not have a knowledge of IL and lacked skills in the key information literacies, particularly cultural literacy (child online safety and information law). Social norms and self protecting behaviours (aspirational reporting of children's skills and parental modesty) however, make it difficult for information professionals to appropriately target supports as IL support was not an expressed need. There is a danger though that if parents lack the ability to display relevant skills and knowledge, children will lose trust in them as a viable source, leading older children to use friends or online sources without having the critical capacity to judge credibility or appropriateness. The survey responses suggested that supports for parents should focus on learning at home (via online resources) or be based in schools.

There was evidence that children and parents conform to microworld social norms when discussing ISB and ELIS, however, it was still possible to use the data provided to construct a model of children's ELIS based on the processes referred to by children and parents, particularly the prioritisation of information sources in relation to need. This provided a picture of children's ELIS as a cyclical, holistic, experiential process, with the method of resolving ELIS needs generating further needs. The ability to tolerate delay was important in children's decision to proceed with ELIS and younger children aged 4-7 years sometimes required quick fixes to needs. An ability to gain ELIS resolution quickly could be enhanced by the availability of more child friendly factual resources, particularly those in minority languages or amenable to visual searching.

Despite parents (and children) indicating that libraries lacked appropriate factual resources and social activities for children aged 4-7yrs, the biggest impact on use was encountering staff who lacked understanding of children's needs. Yet the parents interviewed expressed a fondness for libraries and were eager to encourage their children to use them more, as they were viewed as good resource for learning how to find information. PixieF47 commented

> "I think the libraries are really important because it's about learning for everyone,
> ...but I think with so much consumerism and commercialism, the fact that you can go

to a library... and you don't have to have it just in your house for you, it can go back
to the library, I love libraries, just for that reason"

The idea of ELIS as a holistic *experience* where knowledge and skills are *shared* between children and parents heightened the gap between family ISB and curriculum. In the school context ISB focussed on purposeful, online enquiry by lone individuals, yet in the home sharing information had an emotional value, generated by young children's excitement in their new experiences of the macroworld.

21,927 words (including tables)

Appendix 1 Children's interview questions

1. What is information?

2. a. What sort of things do you like finding out stuff about?

   b. What do you do to find out about_____

   c. What might another boy or girl your age do to find out about things?

3. a. Which people would you ask to find out about stuff? Why?

   b. What else could you use?

   c. What books or magazines?

   d. I can see that there is (TV/Computer/games machine) in the room- what do you use to find out about stuff?

4. I want you to think of a time recently when you wanted to find out about something.

   a. What was it?

   b. What were you doing when you thought about that?

   c. What did you do to find out?

   d. Can you show me what you do?

5. What stops you from finding out the stuff that you want to know?

6. a. What sort of things has your teacher taught you to help you look for information?

   b. Do you use any of that to look for information when you are outside of school? Why?

7. Nearly done- just a few more questions about some things we haven't talked about yet

    a. Can you use a computer? Are you good at it?

    b. Can Mum/Dad use the computer well too?

    c. What would you do to search for something online?

    d. What would you do to download a file or document?

    e. Do you ever use email or facebook or something like that?

    f. When you look for stuff- how do you decide which people or things to use?

    g. a. Do you ever use libraries to find out about stuff?

       b. What could libraries do to help you find out about things?

Thank you so much for helping me to do my research!

1. I want you to think of a recent time when your child came to you with an "information need"- for example a request to find out about something or when they seem to be trying to find out about the world or they needed to solve a problem. Then I want you to tell me a bit about what happened.

    a. What did your child ask or need?
    b. Where were you when they asked the question?
    c. What were they doing prior to asking the question?
    d. What did you do to respond to their need?
    e. What was your child's reaction to the response?

2. Was this a typical example? Why?

(Can you give me another example either similar or different depending on response to 2. (repeat questions)

3. How well do you think you manage to meet your child's information needs?
    (Do you feel confident about managing your child's information requests?)

4. a. What sort of technology do you use as a family?
    b. What does your child have access to?
    c. Do you supervise their use of technology? In what way?

5. a. How would you rate your own IT skills?
        (code 1=v. poor   5=excellent)
    b. How would you rate your child's?
        (code- 1=v. poor   5= excellent?)

6. a. Do you use any other information sources? (this can be people places objects).

(if stuck at this question respondents were asked to look around the room for some hints)

b. Which ones?

7. a. Have you ever had a course in "information literacy"? (This can be computer or IT, learning how to access and use media, judging the quality, appropriateness and credibility of information, data protection or copyright)

   b. What did it involve?

   c. Where did you undertake that course?

   d. Does your child receive lessons in Information literacy at school?

Finally- these next questions are just to confirm people's abilities- They will also help me to make recommendations for service development and they will make sure that everything that should be covered in the interview has been covered.

8. How would you search for something online?
9. How would you download a file or document?
10. Do you use email or social networking?
11. Can you tell me how to set the child protection filters on a pc?
12. Do you ever use your mobile phone to look up information?
13. How do you decide whether a source is a good or bad one to use for your child?
14. What could libraries do to help you better support your child's information seeking?
15. a. Can I just ask what your job is please?

    b. and what school your child attends?

Thank you very much for taking the time to answer my questions.

<u>Appendix 3- Information Literacy Survey</u>

Hi, my name is Lorna Carter and I'm a M.Sc. Library and Information Studies student (and a Mum with a son aged 6 yrs). I'm researching the information seeking of families with children aged 4-7yrs, but I need a wide range of people to undertake this survey to see if my conclusions and recommendations apply to the wider population. I'd really appreciate it if you could complete the survey below- it should only take about 5-10 minutes of your time. All answers are voluntary and completely confidential, but it would help if you could answer as many as possible.

1. What do you think is meant by the phrase "information literacy"? (Please tell me in your own words).

2. Which of these information sources did you use in the last month to look for information that you needed for a purpose other than work or school/college/university? (Please circle all that you used).

Own knowledge/memory	Television	Newspapers	Library
Parents	Mobile phone	Books	Health centre
Brother/sister	Phone	Maps	Community centre/project
Other family	Websites	SatNav	Citizens advice service
Friends	Search engine (Yahoo/Google/Bing)		Council department
Professional (doctor/lawyer/ nurse, etc)	Magazines	Academic Journals	Leaflets
Teacher/Lecturer			

Other person/place source (please state)

Please go to question 3 (page 2)

3. How often do you use your mobile phone to look up information?
   (Please circle the answer closest to your regular usage).

   Never   Every 2-3 months   Once a month   Every week   Every day

4. Do you consider yourself to have the following skills- How would you rate your abilities?
   (Please select one answer for each row).

	No skills	Poor	Adequate	Good	Excellent
Computer/IT Use					
Communication (reading/writing)					
Finding and assessing useful information					
Accessing and using media					
Information law (including data protection and copyright law)					

Please proceed to question 4. (Page 3)

5. Please indicate where you received training/experience or if self taught. (Pick all which apply).

	Work	School	College	University	Community Project	Library	Self taught	Jobcentre/ Employment Service	Other
Computer/IT Use									
Communication (reading/writing)									
Finding and assessing useful information									
Accessing and using media									
Information law (Data protection /Copyright law)									

Please specify the nature of
"other"_____

Only 5 more to answer! Please proceed to question 6.

6. Would you consider undertaking a course or getting support for any of the following in the future?
(Please indicate where you would like that support to take place- pick all which apply)

	Work	School	College	University	Library	Community Project	Learning at home distance learning	Jobcentre/ Employment Service	Other
Computer/IT Use									
Communication (reading/writing)									
Finding and assessing useful information									
Accessing and using media									
Information law (data protection/ copyright)									
Homework support for parents									

Please state the nature of
"other"_____

Nearly done!
Please continue to question 7(page 5)

Demographic information

These questions will allow me to understand if demographic factors (such as age, sex or occupation) affect peoples' access to information sources and their information literacy skills. All responses will remain anonymous and no-one will be identifiable in the final recommendations or discussion of the results. (Please circle all which apply to you).

7. Sex   M   F

8. Age   Under 17yrs   18-20yrs   21-29yrs   30-39yrs   40-49 yrs   50-59yrs 60 or older

9. Do you have children? Please indicate the number of children you have in each age group in the appropriate box.

None	6 yrs old	13 yrs old
Less than a year	7 yrs old	14 yrs old
1 yr old	8 yrs old	15 yrs old
2 yrs old	9 yrs old	16 yrs old
3 yrs old	10 yrs old	17 yrs old
4 yrs old	11 yrs old	18 yrs old
5 yrs old	12 yrs old	Over 18

10. Occupation- (please state job title- or if unemployed, homemaker/carer and/or student).

Any other comments?

Thank you for taking the time to take part in my survey!

Appendix 4 Participant Information Sheet- Children

Department of Computing and Information Science

Research into the everyday life information seeking (ELIS) of families which include a child/children aged 4, 5, 6 or 7.

Hi, I'm Lorna and I'm trying to find out more about how children find out about stuff and family means the people you live with everyday.

I need Research Assistants to help me find out how children look for stuff (or information) that isn't for a school project. That's any of the questions you think of everyday.

Sometimes you might use something to find an answer. (An information source).

Sometimes you might answer the questions yourself or might decide you don't really need to know.

Sometimes you might go to a special place to look for answers.

Sometimes you might ask someone else for help.

I need to find ways to help those other people to help you and to make the "information sources" easier to use.

Do you have to take part?

You don't have to answer my questions- but it would be really good if you could try. If you don't understand what I mean, just ask. You aren't getting tested and there are no wrong answers. You can have your Mum or Dad with you while you answer the questions if you want.

What will you do?

You will be asked some questions and to show me the things that you use and what you do if you want to find out about stuff. I'll also ask you how you do some things (like use a computer) and how you rate how good or bad a source is. I'll also ask what other people do to help you and what could be changed to make the people, sources and places better.

Why am I asking you?

Because you are aged 4, 5, 6 or 7 years old and no one else has found out how children your age look for information. I think that the sources would be better if people like me listened to children more- so this is your chance to tell people what children do and want.

Are there risks to taking part?

There are no risks to you taking part- I don't want to upset anyone and no-one will know who talked to me in the interviews.

If you do feel upset or don't want to answer anything, that's fine. I'll stop straight away.

What happens after the interview? How do you remember what I've said? Can I change it later?

Everything is recorded, written down and stored according to rules made by the government and the university. I'll use a small machine to record our voices and will write some things down. No-one will know who spoke to me- your information is confidential (secret) and kept locked away. Instead of your name I will use a code number (maybe you can help me choose one for your family?). If I want to write down exactly what you said in my report I'll email or call your Mum/Dad and ask if that is ok.

Your parents will get a copy of the report to tell me what they think before I give it to my tutor. That way I can check that everyone is happy with the way they are included.

What happens next?

If you are happy to be involved in the project, please sign the consent form. Your Mum/Dad will also have to sign a form because you are under 12 years old. I'll then ask you the questions and you'll give me your answers and you can have Mum or Dad there to help you if you want. You can also listen to the answers that Mum/Dad give too if you want to see what happens first. Thank you for offering to help me. If my work is really good I might get to publish it in a magazine, but I'll ask again if it is ok for me to use anything you say in the article.

Researcher Contact Details:- Lorna D Carter lorna.carter@strath.ac.uk

Consent Form

Department of Computing and Information Science
Research into the everyday life information seeking (ELIS) of families which include a child/children aged 4, 5, 6 or 7.

- I understand what the researcher will ask me to do and she has answered my questions.
- I understand that my participation is voluntary and that I can stop at any time, without having to give a reason and without any consequences.
- I understand that I can stop the researcher using my contribution/words at any time.
- I understand that any information recorded in the investigation will be confidential (secret).
- I consent (agree) to taking part.
- I consent (agree) to my voice being recorded as part of the project   Yes/ No

I,   (PRINT NAME) hereby consent (agree) to my participation in the above named project.

Signature of participant: Date:

The legal bit:- The University of Strathclyde is registered with the Information Commissioner's Office who implements the Data Protection Act 1998. All personal data on participants will be processed in accordance with the provisions of the Data Protection Act 1998. This investigation was granted ethical approval by the University of Strathclyde ethics committee. If you have any questions/concerns, during or after the investigation, or wish to contact an independent person to whom any questions may be directed or further information may be sought from, please contact:

Secretary to the University Ethics Committee,
Research & Knowledge Exchange Services,
University of Strathclyde,
Graham Hills Building,
50 George Street,
Glasgow,
G1 1QE   Telephone: 0141 548 3707   Email: ethics@strath.ac.uk

Appendix 5 Participant Information Sheet- Parents

Department of Computing and Information Science

Research into the everyday life information seeking (ELIS) of families which include a child/children aged 4-7yrs

Introduction

My name is Lorna Carter and I am a M.Sc. Information and Library Studies student, currently undertaking a research project as part of my Postgraduate course. Children's information seeking doesn't just take place at school or for school project work but (as a parent) I have noticed that there gaps between the expectations and abilities of children and parents, and the school curriculum. This investigation will help me to better understand the needs of parents and children, including recommendations for information service improvements and further research.

What is the purpose of this investigation?

AIM- To investigate supports available for 4-7yr old children's everyday life information seeking (ELIS).

Objectives-

4. To analyse children's everyday life information seeking behaviour, particularly the involvement of parents in meeting their needs.
5. To report on parents' information literacy skills in contrast with those of their children and the "Curriculum for Excellence."
6. To make recommendations for ways that information services can improve children and parents' access to information and information literacy skills.

Do you have to take part?

Participation is voluntary. You can withdraw from the study at any point and are not under any obligation to complete the study, answer any particular question, or undertake any particular task. You will be given the opportunity to comment on written recordings at the end of the interview sessions and a draft of the researcher's interpretation of interview content and findings/recommendations will be distributed for comment in August 2012.

Audio recordings of interviews will be made and permission for recordings will be given via signing the consent form. Care will be taken to explain the process to children as fully as possible, but written permission for child participation will be made by parents/guardians on their behalf.

What will you do in the project?

Parents and children will be interviewed by the researcher within their own home. Parents and children can be present during each other's interviews. The home location was chosen because prior research has shown that this aids memory. As younger children may find it difficult to talk to the researcher in an interview situation, they can instead demonstrate the processes they undertake to look for information via a "walk through" of the process within a familiar setting. The interview will also contain a few questions which will help to determine demographic impacts upon information access and information literacy skills, (i.e. parental employment, school attended by child). As some of the participants are in bilingual education it is important to distinguish between their responses and those of children in mainstream education as this may affect results. Parents and children will also be asked a few questions which will help demonstrate their current information literacy capabilities. Audio recordings will be made of the interviews and the researcher will also take written notes.

There will also be a brief online survey attached to the project, which will include a wider group of participants. You may also be contacted by the researcher by email to clarify information provided during interview and to give consent for direct quotes from interviews to be included in the final report.

Interviews will take place in July 2012 at a time to suit the participants. Children will receive a small gift in thanks for their participation.

Why have you been invited to take part?

You have been invited to take part in this study as you have responded to an initial advertising campaign and have a child aged 4-7yrs.

What are the potential risks to you in taking part?

There are no anticipated risks for participants as interviews take place within a familiar location and do not deal with sensitive or upsetting subjects, however, as child participants are involved, child protection has to be taken into consideration. Great care will be taken to ensure no distress is experienced by participants but any sign of disruptive behaviour or discomfort in a child will be seen to be a withdrawal of their consent for continued involvement in that interview. Should the researcher receive any information which suggests that a child is at risk of harm, such information will be passed on to the appropriate authorities.

What happens to the information in the project?

The University of Strathclyde is registered with the Information Commissioner's Office who implements the Data Protection Act 1998. All personal data on participants will be processed in accordance with the provisions of the Data Protection Act 1998. For example, data will be processed on a laptop and stored on a USB stick however neither will leave the home of the researcher and both are for the researcher's sole use. The USB and all paper records will be stored in a secure cabinet and shared drives will not be used for data. Recordings/data/notes will have a code number assigned to each participant to ensure anonymity. The key file will be password protected and stored separately from transcripts. Audio recordings will be made during interviews and field notes will be made on an offline netbook or on paper- files will then be transferred on return from each interview so that no files are stored on devices used for fieldwork out with the day of collection. All transcripts and recordings will be destroyed within 2 weeks of confirmation of award.

Thank you for reading this information – please ask any questions if you are unsure about the content.

What happens next?
If you are happy to be involved in the project, please sign the attached consent form.

Thank you for offering to support my research. Interviews will commence at the time and date requested.

The completed dissertation will be submitted for marking on 3rd September 2012 and I will inform participants of the results. Should my report be selected for wider publication, further consent will be sought from participants for the inclusion of quotes from interviews.

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This investigation was granted ethical approval by the University of Strathclyde ethics committee.

If you have any questions/concerns, during or after the investigation, or wish to contact an independent person to whom any questions may be directed or further information may be sought from, please contact: Secretary to the University Ethics Committee,
Research & Knowledge Exchange Services,
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Consent Form

Department of Computing and Information Science
Research into the everyday life information seeking (ELIS) of families which include a child/children aged 4-7yrs

- I confirm that I have read and understood the information sheet for the above project and the researcher has answered any queries to my satisfaction.
- I understand that my participation is voluntary and that I am free to withdraw from the project at any time, without having to give a reason and without any consequences.
- I understand that I can withdraw my data from the study at any time.
- I understand that any information recorded in the investigation will remain confidential and no information that identifies me will be made publicly available.
- I consent to being a participant in the project
- I consent to being audio recorded as part of the project
      Yes/ No

I,   (PRINT NAME) hereby consent to my participation in the above named project.

Signature of participant: Date:

I also hereby agree to the participation of my child/children:-

(PRINT NAMES)

And to my child/children being audio recorded   Yes/No

Signature of Parent: Date:

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