

Teachers and information literacy: understandings and perceptions of the concept

Abstract

Building on our 2017 article focussing on school library staff perceptions of teachers' information literacy, this article reports on the information literacy (IL) understandings and skills of teachers in post primary schools throughout Northern Ireland. Results of a comprehensive online teacher survey (n=426) indicated that despite misplaced confidence in their own skills, teachers' IL understandings and skills were underdeveloped. The majority of respondents had neither received IL training nor included IL instruction in their teaching. The significance of these findings for theory, practice and policy relating to the teaching of IL skills, which are intended to equip young people to become active citizens and members of a skilled workforce, is discussed.

Keywords

Teachers; Information Literacy; Librarian Teacher Cooperation; Secondary Education; Northern Ireland.

1. Introduction

This paper seeks to build on previous research by McKeever (2013) and McKeever et al (2017) which identified concerns relating to the information literacy skills of teachers in Northern Ireland (NI). McKeever (2013) looked at the information literacy skills of Year 14 pupils as they prepared to leave school and make the transition to university or work. Through interviews with teachers, this study concluded that pupils "cannot be expected to develop these skills if their teachers lack knowledge and awareness of IL and are not teaching IL skills or embedding them within IL practice" (McKeever et al 2017). Furthermore, the 2017 paper found that school library staff reported low understanding of information literacy and librarian-teacher collaboration amongst post-primary teachers in NI. The aim of this study is therefore to further investigate post-primary teachers' levels of IL awareness and skills in NI using a quantitative survey. Few similar studies exist worldwide and this research was the first of its kind to be conducted in Ireland.

Current definitions of IL revolve around ideas of being able to effectively access, use and communicate information, with recent iterations tending to either incorporate references to both technology and the individual and/or presume that information literacy covers all information, regardless of format. Another characteristic of contemporary definitions of IL is that they tend to also emphasise why IL is important, i.e. the outcomes for the individual – as can be seen in the following recent Chartered Institute for Library and Information Professionals (CILIP) definition. In 2018, CILIP approved the following definition: "Information literacy is the ability to think critically and make balanced judgements about any information we find and use. It empowers us as citizens to develop informed views and to engage fully with society" (CILIP, 2018).

Information Literacy (IL) is clearly important in an era of abundant information which is readily accessible using a range of digital technologies. However, IL is an unfamiliar term to most teaching professionals, being most often associated with and used by those in the field of Library and Information Science (Cheuk, 2002; O'Sullivan, 2002; Henczel, 2004; Kirton & Barham, 2005). It is therefore important to consider the different ways in which IL is understood and interpreted as this can vary between different sectors, with implications for policy and practice.

The transition to the Information Age has meant that IL skills are necessary in the workplace and wider society. As a result, IL has also assumed an increasingly significant presence in education

over the years (Herring, 2011; Latham et al, 2013; Sandercock, 2016): “Now is a particularly crucial time for teachers and school librarians to be working together to educate students in the skills needed to be successful in the digital age” (Latham et al, 2013 p.3). Promoting and developing these skills is essential in contemporary knowledge-based societies; as so much information is now readily available through smartphones, tablets and laptops, students need to have the skills to access, use, understand, evaluate and share this information. Developing students’ IL skills has benefits not only for their education, but also in their everyday life and as adults, in the workplace (Smith, 2003; Reed & Stavreva, 2006; Klebanksy & Fraser, 2013; Kimmel et al., 2014).

Doyle (1999) and Laverty et al (2008) have argued that a critical pre-requisite for pupils to develop effective IL skills is strong teacher competencies with regard to information handling, and that teachers must become information literate. Williams and Wavell (2006) and Church (2008) go further arguing for a whole school approach, with teachers and librarians supporting each other in providing instruction and developing IL skills. Moreover, the school principal should encourage this collaborative approach, enabling what is taught in the classroom to be complemented and reinforced in the library, and vice versa. However, where research has been undertaken in a school context, teachers have been found to lack both knowledge of the concept and confidence or skills to efficiently retrieve and evaluate information as part of their professional research and practice (Williams & Coles, 2007).

2. Research context

In NI, Initial Teacher Education (ITE) qualifications can be achieved through two distinct routes, either a four-year Bachelor of Education (BEd) degree (the concurrent route) or a degree followed by a one-year Postgraduate Certificate of Education (PGCE), known as the consecutive route (Osman, 2016). Furthermore, courses are offered by four institutions and teacher education consists of three phases; ITE, Induction during the first year of teaching, and Early Professional Development which takes place during the second and third years of teaching practice.

Discussing its vision and mission, the General Teaching Council for Northern Ireland (GTCNI) has referred to the emerging knowledge society – a data rich world “where economic success will be dependent upon creativity, ingenuity and the ability to access and synthesise data, and work in teams to innovate and problem solve” (GTCNI, 2011, p.7). The Council notes the importance of developing appropriate skills in young people during their education to enable them to succeed in this knowledge society. The GTCNI specifies the competences deemed necessary to be developed during teacher education, which fall under three broad headings; professional values and practice, professional knowledge and understanding and professional skills and application. Although IL could be slotted in under and would be relevant to any of these areas, the sixth competence is especially relevant to IL; it recommends that teachers should have “a knowledge and understanding of the factors that promote and hinder effective learning, and be aware of the need to provide for the holistic development of the child” (GTCNI, 2016, p.13). IL could be considered as one of these factors and an awareness of the concept would enhance teachers’ knowledge of what can promote or hinder effective learning. The course guides, prospectuses and syllabuses for each ITE programme in NI were examined and it was found that IL was not directly or explicitly mentioned.

3. Information literacy in schools

The importance of IL in schools has been the topic of many research studies over the past three decades; some have explored IL in the primary school sector (e.g. Griffin, 1981), IL in the secondary school sector (e.g. Herring, 1996; Latham et al 2016), IL and its place in the curriculum (e.g. Hopkins, 1987; Jackson & Mogg, 2005), teaching IL skills in schools (e.g. Herring, 1996), the role the school library plays in IL in schools (e.g. Williams & Wavell, 2001; McKeever et al, 2017)

and IL and pupils' internet use (e.g. Herring, 2011). Cunningham and Williams (2018) take a holistic view of IL from a range of stakeholder perspectives (which included pupils, parents, teachers, librarians, and IT staff) and emphasise the importance of information context in relation to how individuals perceive and understand IL. Regarding teachers' IL skills, it has been suggested that teachers are aware of IL and possess the associated skills but do not know how to teach pupils these skills. Moore (2002) reported that teachers were aware of the importance of IL but unsure of how to promote it in the classroom. Merchant and Hepworth (2002) noted that the teachers in their study were information literate but that they had developed these skills through their own personal interest rather than having received any training. Moreover, participants in their study were not addressing IL in the classroom. Probert (2009) found that some teachers had good understandings of IL but reported a tendency to associate it with other literacies (such as computer literacy). Few teachers in Probert's study reported doing anything to help students develop IL skills, assuming students already had good skills. In contrast, other researchers have suggested that teachers themselves have little understanding of, and are hence unable to teach, IL skills. For example, Williams and Coles (2007) found that teachers thought of IL as a relatively new concept that they did not feel confident enough to teach. Korobili et al. (2011) noted that IL was "still unknown" amongst teachers and that the teachers in their study were attempting to provide IL skills instruction but were doing so poorly. Smith (2013) found that teachers were confused by the term and were insufficiently prepared to teach IL skills. A common feature of this literature is that teachers are not providing effective IL skills instruction, regardless of whether or not they are familiar with or understand the concept. It is important to note that the majority of the existing research on teachers and IL has been conducted from a library and information perspective. The few examples of research from outside of the LIS sector have, however, reported similar findings from the field of education (Asselin & Lee, 2002; Lee et al., 2012).

The Scottish IL project was created in 2004 with the objectives of identifying the IL skills students brought to university and to use these identified skills to create an IL framework. This framework was intended to extend from secondary school to HE with the overall aim being that children would leave school with IL skills that could be developed and used in HE (Irving & Crawford, 2008). The project ended after five years with the creation of a framework and a successful petition to the Scottish Parliament to ensure the curriculum in Scotland would recognise of the importance of IL as a lifelong learning skill. This framework consists of a series of checklists of the various IL skills be expected of students at each education level as well as information on the importance of assessment and how to assess IL skills. (Irving & Crawford, 2008). No similar framework exists in NI.

4. Theoretical framework

There have been a number of theoretical contributions aiming to further understanding of how and why teachers may lack IL knowledge and skills and may therefore not be equipped to teach IL. Mellon's Library Anxiety theory (1986) may be relevant: although emerging from a study of undergraduates, others have found that library anxiety has been exhibited by graduate students (Jiao & Onwuegbuzie, 1998) and also in newly hired employees (Katapol, 2005, p.238). The theory is based on the idea of the individual experiencing anxiety when seeking information, as well as lacking confidence in their abilities and feeling uncertain about what information they need, how to access it and what to do with it. It can be argued that there is a direct link between a lack of IL skills and anxiety when seeking and accessing information. Mellon found that undergraduate students considered their own library skills inadequate compared to the skills of other students, that they were ashamed of this inadequacy and felt the need to hide it, and that they feared they would reveal their inadequacies by asking questions or asking for help (1986, p.160). Library anxiety theory could explain a lack of developed IL skills in teachers; anxiety may be strongest when teachers enter the profession and remain to some degree, although reducing over time. This is supported by Probert (2009) who found that younger teachers with less teaching experience were more likely to misunderstand IL than their older, more experienced colleagues.

Kuhlthau's Uncertainty Principle (1993), which emerged from her Information Search Process (ISP) model, also focuses on the idea of an individual lacking confidence and therefore experiencing anxiety. Kuhlthau studied how individuals experienced the information search process and noticed common patterns in their behaviour. She identified uncertainty as being the feeling that leads to and initiates all information seeking and described it as "*a cognitive state which commonly causes affective symptoms of anxiety and lack of confidence*" (1993, p.347). Kuhlthau noted the importance of acknowledging the full experience of the individual when they are seeking information, that it is uncertainty that has led them here and that they will be feeling anxious and lacking confidence in their abilities as a result of this uncertainty. Kuhlthau argued that the anxiety found by Mellon (1986) is a side effect of the uncertainty that first leads someone to seek information.

Both of these theories can be closely connected to the wider theory of self-efficacy, often defined as an individual's belief in their own ability to complete and accomplish a task (Bandura, 1977, 1986, 1997). Self-efficacy in terms of IL has been defined as an individual's belief in themselves to effectively use information (Korkut & Akkoyunlu, 2008). Success in completing a task is not dependent only on having the skills required; an individual must also have confidence in performing the action to succeed (Bandura, 1997; Geçer, 2012). Therefore, as well as possessing developed IL skills, the individual must believe they are capable when it comes to accessing, evaluating, managing and communicating information. Considered together, these theories on anxiety and uncertainty may help explain a lack of IL skills in teachers, and will be explored in relation to how much secondary school teachers in NI know about IL and their levels of IL.

5. Research method

An online questionnaire (see Appendix) was distributed to post-primary school teachers in 16 schools throughout NI with the assistance of school library staff. The questionnaire was designed to gain insight to teachers' knowledge and awareness of IL, whether IL was part of their teacher education, their views on IL in the curriculum, if/how they are teaching IL skills in the classroom, their views of the school librarian and collaboration with the school librarian. The questionnaire included both multiple choice and free text answer options to encourage detailed responses. Ethical approval was obtained in advance from the relevant University Research Ethics Committee.

The sampling strategy aimed for an inclusive approach rather than a representative one, including all of the different kinds of schools throughout NI as well as a geographical spread. There are 202 post-primary schools in NI and when sampling took place, there were still five different Education and Library Board areas in the region (since replaced by a single Education Authority). Twenty-one schools reflecting each of the school sectors in NI were selected across the Education and Library Board areas, to include selective and non-selective Controlled, Maintained, Voluntary and Integrated schools¹. The Department of Education teacher workforce statistics (DENI, 2015) detail a total of 9382 secondary school teachers, with an average of approximately 45 in each secondary school. Formal power calculation was carried out to ascertain adequate sample size, using the online sample size calculator Raosoft.² With the usual margin of error (5%) and level of confidence (95%) the recommended minimum sample size was 370, meaning at least eight schools had to be included in the sample. To achieve an adequate sample, the decision was made to over-sample in the first instance. School library staff members were approached and asked to distribute the online

¹ There are seven post-primary school types in NI (<https://www.nidirect.gov.uk/articles/types-school>). Controlled schools are managed by the Education Authority and the school's Board of Governors. The majority of students who attend these schools tend to come from Protestant backgrounds. Voluntary Grammar schools are mainly Catholic schools and they are run only by the school's Board of Governors. Maintained schools are Catholic schools and The Council for Catholic Maintained Schools (CCMS) is responsible for them. There are also a number of Integrated Schools and Irish Medium schools in the region, as well as Special and Independent schools.

² Raosoft can be accessed at: <http://www.raosoft.com/samplesize.html>

survey to the teaching staff in the schools via email. The questionnaire was sent to approximately 849 teachers, yielding 414 complete responses with a final response rate of 48.8%. Descriptive statistics were produced using SPSS; this programme was used to perform various parametric tests, examine variables, and check for frequencies and for comparison.

The most common teaching qualification reported by teachers in the sample was PGCE (79.6%) with only 20.4% of respondents having completed a BEd. Tables 1 and 2 below provide an overview of the teachers that participated in the survey in terms of the school sector they work in, with all sectors included in the sample, and the number of years they have been teaching, with a modal response of 10 – 19 years.

Table 1: School type

<i>School type</i>	<i>Number of teachers</i>
Maintained Secondary school	23.9% (n=102)
Voluntary Grammar school	28.9% (n=129)
Controlled Secondary School	14.8% (n=63)
Controlled Grammar School	21.8% (n=93)
Integrated Schools	10.6% (n=45)

Table 2: Years of teaching experience

<i>Years of experience</i>	<i>Number of teachers</i>
1-5 years' experience	25.4% (n=108)
6-9 years' experience	26.1% (n=111)
10-19 years' experience	35.2% (n=150)
20 + years' experience	13.4% (n=57)

6. Findings

6.1 Knowledge and understanding of information literacy

The teachers were asked a number of questions which aimed to gain evidence of their knowledge and understanding of IL. To avoid any confusion, the invitation email included an information sheet providing a clear definition of IL as well as examples of other terms used to refer to this set of skills, such as 'study skills'.

Only 10% of respondents responded 'Yes' when asked if they had understood the term IL fully prior to participating in the study; 45% answered 'Not at all' and 44.4% answered 'Somewhat'. The majority of the teachers who answered 'Not at all' had completed a PGCE in NI, reflecting the preponderance of NI PGCE qualified participants in the sample. In order to explore whether there was a relationship between whether a teacher had an understanding of IL and their teacher education, a chi square test of association between qualification and response was conducted, which produced a statistically significant association between these two variables; $\chi^{(2)} = 7.591, p <$

.05 Those participants with a BEd qualification were significantly more likely to respond that they are familiar with IL than those who had completed a PGCE, which could reflect the longer duration of BEd programmes compared to PGCE courses, arguably giving students more time to become aware of the term Information Literacy.

To explore this issue further in relation to type of qualification, those who answered 'Somewhat' or 'Yes' were asked to explain where they primarily obtained their knowledge of IL. Of the 114 respondents who provided an answer to this question, only 10.5% attributed their knowledge of IL to their Initial Teacher Education (ITE) (please see Figure 1 below) while 34.2% stated that they obtained their knowledge through professional development, such as by completing further qualifications, and 28.9% stated they obtained their knowledge through workplace training. A smaller percentage (13.2%) reported that they gained their knowledge of IL through personal interest in the concept, reminiscent of Merchant and Hepworth's (2002) finding, that the teachers in their study had gained knowledge of IL through interest in the concept rather than any training.

Figure 1: Where respondents primarily obtained their knowledge of IL

The relationship between teachers' familiarity with IL and their years of experience was also examined. The majority of those who reported that they were familiar with IL had over twenty years of experience and none of those who answered 'Yes' to this question were in the newly qualified category of 1-5 years of teaching experience, even though over 25% of the participants fell into this category. A chi square test indicated that those who had more experience were significantly more likely to be familiar with IL; $\chi^{(2)} = 75.661, p < .05$. This contrasts with findings from other studies, in which experience was not found to be a significant influence on teachers' knowledge and awareness of IL (Merchant & Hepworth, 2002; Williams & Cole, 2007; Probert, 2009).

The teachers were then asked which term they would use when referring to the set of skills described in the study as IL, and if they had received training under this name during their ITE. 'Library skills' was the most frequent response (31.7%) and 11.1% of these teachers had received training under this name during their ITE; 23.9% would use the term 'study skills' with just over half (53%) of these having training in this in their ITE, 9.2% called them 'research skills' with 30.8% of

these having training during their ITE. A further 7.7% referred to them as 'communication skills' and only 4.2% of respondents used the term 'IL skills'. This finding suggests that the name given to this kind of skills training leaves a lasting impression, as many respondents still referred to these skills in the way they were introduced to them.

6.2 Information literacy training

The teachers were asked further about any instruction that was formally referred to as IL training during their ITE. The overwhelming majority of respondents (98.6%) answered 'No' to this question. These participants were then asked if they had been taught these skills under any other name or label, and a large majority of 87.8% again answered 'No'. The 12.2% who answered 'Yes' stated they did receive some IL training under a different name, such as research skills, study skills, library skills with a few individuals naming ICT skills training, library and study skills training and two respondents even named Performance Review and Staff Development (PRSD) training.

Only six (1.4%) of respondents stated that they had received formal IL skills training. When previously asked if they were familiar with IL, three of these respondents had answered 'Yes' and the other three commented that they were 'Not Sure'. When asked if they had any prior understanding of the concept all of these respondents answered 'Somewhat'. These findings suggest that in addition to a general lack of IL skills instruction on ITE courses, even when explicit instruction takes place, it may not be absorbed by students or they are not confident in their understanding of the concept. The range of ITE qualifications taken at different universities was explored but did not indicate a pattern of IL instruction taking place in some universities or on some courses more than others; instead there seemed to be a more general lack of effective instruction across the board.

6.3 Information literacy training in the workplace

In relation to IL skills training in the workplace, again an overwhelming majority (95.1%) answered that they had not received any training referred to as IL at work. Some respondents (14.4%) stated that they had received training on these skills, but under a different name; three quarters of these had received study skills training in their schools, while 10% had received ICT skills training, 5% reported training on communication skills, and another 5% stated they had received study skills and communication skills training, with one individual reporting that they had received training on study skills, accelerated learning and thinking skills. This does provide evidence that some schools may be recognising the need for training in these skills but nevertheless a very small proportion, less than 5%, of the teachers surveyed reported receiving training referred to as IL training.

6.4 Awareness of information literacy

The respondents were asked if they thought 'teachers generally' knew what IL was. Unsurprisingly, a large majority (87.3%) answered 'No' to this question, the most common reason being that there was no training provided on IL (20.2%). Some of these teachers referred specifically to a lack of training on IL during their own ITE:

'Teacher training did not focus on it (IL) when I was at University. I have acquired the knowledge I have about it through study skills workshops ran in school and it is the same with other teachers.'

A number of respondents (20%) mentioned a lack of IL training both during their ITE and in their workplace and a further 16% reported that there was not enough training for teachers on IL. A lack of time and funding for training was suggested by three respondents as the reason for a lack of knowledge of IL. These findings would tend to support the idea that teachers are unable to teach IL skills as they have little or no knowledge of the concept (Moore, 2002).

Some respondents (16.1%) reported that they did not think teachers would know what IL was, simply because the term 'IL' is an unfamiliar one. Further emphasising this, 13.7% respondents answered that they had never heard of IL and/or did not know what it was before taking part in this study and thought this was the reason why teachers would not know what it was. Others (7.2%) thought IL would need to be referred to differently for teachers to understand it. A smaller percentage of the sample (4%) reported that teachers did not know what IL was because they would refer to these skills differently and call them something else other than IL. Of these, nine preferred the term library skills and six preferred study skills. Others (4.8%) reported that they thought that teachers would not know what IL was as they thought this was a new name for these skills: *'This seems to just be a newer term for traditional library skills? We know what library skills are but we wouldn't know what this means.'* A further 6.4% indicated that teachers did not know what IL was because it was not required or relevant in teaching. Nine teachers referred to the library in their answers, for example:

'These seem to be more to do with the school library than us teachers.'

These findings demonstrate clearly that the vast majority of teachers in this study thought that other teachers were unaware of IL for many different reasons, with the most common reason suggested being a lack of training during teacher education, although a variety of other possible explanations were suggested, such as a lack of workplace training, the terminology and the strong association of IL with the library.

6.5 Information literacy skills assessment

The questionnaire also included four questions designed to provide a basic assessment of the IL skills of the sample teachers. Twelve respondents exited the online survey at this stage; the total number of respondents from this point was 414. First of all, a reference to a chapter in a book was presented and the teachers were asked to identify which kind of reference it was; only 33.3% correctly identified this as a book chapter. A reference to a journal article was presented next and 50.7% of teachers correctly identified this as a reference to a journal article. The third question asked the teachers for a maximum of four search terms they would use if they were performing a search for information on a comparison of education systems in France and Greece. The correct answer was any combination of 'France Greece Education Systems'. Only 21.6% answered the question correctly. The fourth question asked respondents to imagine they were preparing class notes on the Olympics and to identify which of the following sources could be included without a citation; an image of an athlete, facts read in a book that they have put into their own words, the date of the 22nd Olympic Games or facts from a webpage. The majority of respondents answered incorrectly, and almost half, 47.1%, thought that the answer was facts read in a book. Only 40.6% gave the correct answer (the date of the 22nd Olympic Games). The majority of the respondents therefore answered incorrectly on three occasions.

The teachers were then asked about their own use of print and electronic resources. Overall, the majority of respondents (76.8%) reported that they felt very confident using print resources to retrieve information. Fewer respondents felt confident when using electronic resources to retrieve information (53.6%).

The teachers were also asked if they used Wikipedia and if so, for what. Half of the sample, 50% stated that they used Wikipedia for their own research, 26.1% responded that they did not use it. However, 23.9% stated that they both used Wikipedia and shared information from it with their students, suggesting lack of awareness of the potential of encountering inaccurate information on the site.

The final question in this section asked the teachers to rate their own IL skills. The majority of respondents rated their skills as 'Very Good' (44.1%) or 'Good' (42.6%), 8.8% rated their skills as 'Average' and a very small number of the teachers rated their skills as 'Excellent' (2.9%, 12). Only six respondents (1.5%) considered their skills to be 'Poor'. None of the teachers thought that their skills were 'Very Poor'.

Of the 2.9% (12) teachers who rated their own IL skills as 'Excellent', just six had received any kind of training they considered as being similar to IL skills training, while none had received any formal IL work based training or similar. Similarly, small numbers of those who rated their own IL skills as 'Very Good' had received formal IL training or similar. A cross tabulation comparing the respondents' test scores and their knowledge and familiarity of IL demonstrated that the majority of those who rated their skills as Excellent, Very Good, Good and Average scored less than 2/4 on the IL skills assessment (see Table 3 below). Somewhat surprisingly, a statistically significant relationship was found between participants' test scores and their self-ratings, with those who scored *lower* on the skills test being significantly *more* likely to rate their own skills more highly; $\chi^{(2)}= 55.003, p < .05$

Table 3: Respondents IL test scores and self-ratings

<i>Rating/ Test Score</i>	<i>Poor</i>	<i>Average</i>	<i>Good</i>	<i>V Good</i>	<i>Excellent</i>	<i>Total</i>
0/4	0	18	75	21	6	120
1/4	3	9	39	57	3	111
2/4	3	3	45	45	3	99
3/4	0	6	15	36	0	57
4/4	0	0	3	24	0	27
Total	6	36	177	183	12	414

As previously mentioned, the majority of the teachers surveyed answered incorrectly on three of the four basic IL skills assessment questions, suggesting that their IL skills are lacking and/or underdeveloped, and others have reported similar findings (Colaric et al., 2004; Lee et al., 2008). However, our findings also suggest a prevailing over-estimation of ability among teachers; those who rated their skills as 'Excellent' or 'Very Good' tended to score lower on the test than those who were less confident in their self-ratings. An over-estimation of ability has also been reported in the existing literature (Latham & Gross, 2007). For more on the Dunning-Kruger effect in education see Kruger and Dunning (1999). While the current study included only a very basic IL skills assessment, further research in this area is clearly warranted.

6.6 Views of information literacy in the Northern Ireland Curriculum

The teachers were asked about their views of IL and the NI Curriculum. Almost half the sample (44.2%) reported that IL skills were included, but were not called IL, in the curriculum. Just over a third (34.8%) of the respondents were not sure if these skills were included in the curriculum, 20.3% thought that these skills were not included. Only three respondents (0.72%) thought that these skills were included and were referred to as IL skills. These findings are consistent with the review conducted of the NI Curriculum which found that IL is not explicitly mentioned, as well as with comments made by the teacher educators and other stakeholders during interviews as part of the wider study. Similar findings have been reported in the literature on teachers' views of IL in the curriculum in Scotland and England (Williams & Wavell, 2006).

The teachers were then asked if they thought that IL was addressed in their main subject. Nearly half of the sample (49.3%) thought that these skills were addressed in their main subjects but not

called IL skills, and 47.1% stated that these skills were not addressed in their main subject. Just 2.9% were unsure and only five (0.72%) thought that these skills were addressed in their main subjects and called IL; analysis of the NI curriculum found no explicit mention of IL.

6.7 Information literacy and teacher practice

The teachers were asked if they provided any kind of IL skills instruction to their students. A large majority (81.2%) of respondents answered 'No' to this question and the three most popular reasons given were that the school librarian did this, because the skills are not assessed and because they are too busy. These reasons have been reported in other research studies (Bucher, 2002; Korobili et al., 2011).

Figure 2: Reasons for not providing IL skills instruction

Respondents were also asked if they encouraged or discouraged the use of specific types of resources in the classroom; 65.9% of respondents stated they did not, but almost a third (29.7%) reported that they did encourage their students to source information from specific types of resources, with 95.1% of these providing additional comments. The specific types of resources included books as well as the internet, trustworthy or reliable resources and a variety of sources. A few teachers reported that they instruct their students exactly where to find information, and/or encouraged the use of a particular source to augment information they provided. Only nine respondents commented that they only encouraged the use of information they themselves had provided.

These findings indicate a probable high level of reliance on the school librarian to provide IL skills instruction as well as highlighting the issues of teachers lacking time and being too busy to focus on these skills, and also choosing to focus on what is more explicitly assessed.

6.8 Spoon-feeding

Considering the full set of free text responses to questionnaire items, 42 references to teachers spoon-feeding students were found. All of these comments referred to how the teachers provide students with the information they need, rather than encouraging them to access it themselves. Comments included:

'Yes they get their information from the resource pack I give them at the start of the year.'

'No they are given everything they need so they don't just 'Google' everything.'

Given the particular emphasis on promoting active, enquiry-based learning as a learning experience at Key Stage 3 in the NI Curriculum (NI Curriculum, 2018a) and as part of independent and lifelong learning at Key Stage 4 (NI Curriculum, 2018b), these responses suggest that teachers may be limiting opportunities for students to develop their IL competences by spoon-feeding them instead of allowing them to find and evaluate information independently. This is consistent with evidence from existing research (Merchant & Hepworth, 2002; Probert, 2009; McKeever, 2012). These findings can certainly be linked to the systematic challenges teachers face; increasing pressure to ensure students achieve good grades in an assessment focused system, the associated workload, administrative burden and lack of time. For some teachers, consequences of these challenges may include provision of information to their students instead of encouragement to find it, to the detriment of development of IL skills particularly at Key Stage 3 (Ofsted, 2015).

6.9 Evaluation of students' skills

Participants were asked what they generally thought of their students' IL skills. A small majority of respondents (51.4%) thought that their students were 'as skilled as you would expect them to be' and this perhaps helps to explain why teachers are not providing IL skills instruction. Probert (2009) discussed the assumptions underlying teachers' failure to provide IL skills instruction, which included assuming students are already skilled or that someone else would do it. While 39.1% of respondents reported that their students were 'less skilled than you would expect them to be', only 9.4% thought they were 'more skilled than you would expect them to be'. The next questions asked the teachers how they thought students *should* develop their IL skills. The most common answer provided was that the teachers thought that their students should develop their skills with the help of their school librarian (28.3%), 17.4% thought they should do so independently and 11.6% thought they should develop their skills with the help of teachers. Interestingly, however, 21.7% of respondents thought that teachers *and* the school librarian should help develop their IL skills.

A small number of respondents (2.9%) provided 'Other' answers, such as that students should develop their IL skills both independently and with the help of the school librarian, or that students should develop their skills in primary school and at home and or in Learning for Life and Work (LLW)³ classes (one respondent was unsure).

The next questions focused on who has, and who should have, the responsibility for providing IL skills instruction in schools. The most common answer was that school librarian is responsible (44.9%), while 18.1% thought this was the responsibility of both the teacher and the school librarian, with only 10.9% reporting that IL skills instruction is the responsibility of the teacher. Over a quarter of respondents (26.1%) provided a variety of 'Other' answers; these included that students developed these skills independently, Learning for Life and Work, or ICT, or 'other' teachers should do it, that IL was unnecessary or no one was responsible, did not know or unsure who should do it, unsure but thought that their librarian was responsible. Only one teacher thought that the LLW teachers and the school librarian were responsible for this.

When asked who they thought *should* be responsible for providing this kind of instruction, the most common answer was that teachers *and* the school librarian should be jointly responsible for providing this kind of instruction (39.9%). Another 31.2% thought that school librarians should be responsible and 9.4% thought that teachers should be responsible. In the 1980s Liesener's (1984) report noted that 49.6% of teachers thought that librarians should be responsible for providing this instruction. This finding may suggest a slight change in opinion over the past three decades.

³ Learning for Life and Work was introduced to the NI Curriculum as an 'area of learning' after research indicated a need for closer links between the curriculum and developing skills and capabilities necessary for life and work (CCEA, 2016).

Again, a substantial proportion of respondents (19.6%) provided 'Other' answers, broadly similar to those proffered in relation to who is responsible for IL instruction. It is notable, however, that so many teachers thought that teachers and librarians should be providing IL instruction, yet so few reported that they provided this themselves. As mentioned earlier, the main reasons provided for this were that they were too busy, that the librarian does it and that these skills are not assessed. Teachers' views on how this instruction should be provided clearly contrast sharply with their own practices, perhaps indicating a desire to engage coupled with competing demands which hinder any change in classroom practice.

6.10 Discussing information literacy

An overwhelming majority of 97.1% of teachers reported that they had never discussed IL with their school librarian. The few who answered 'Yes' were asked who had initiated the conversation, and all twelve of these (2.9%) stated that their school librarian had started the conversation. The teachers were then asked if anyone else in their workplace had ever discussed IL. Of the 408 respondents who answered this question; 94.8% answered 'No'. Clearly IL is not currently a 'hot topic' of discussion in schools, between teachers, or between teachers and librarians.

7. Discussion

It was deemed necessary to define the term IL in the information sheet provided to teachers at the outset of the research, so it is no surprise that our findings are consistent with existing literature in confirming a general lack of knowledge and awareness of IL amongst secondary school teachers in NI. This may be attributed, at least in part, to a lack of training during ITE and also subsequently in Continuous Professional Development (CPD) in the workplace. When asked about this, the majority of respondents stated that they were not familiar with IL prior to participating in this study and only a very small number of those who stated that they were already familiar with IL attributed this to their ITE, with slightly more having cited CPD as the source of their familiarity. This indicates a lack of effective training in IL for teachers during their ITE.

Respondents regarded themselves as typical, as they thought that teachers in general would not be familiar with IL, and again the most frequent reason suggested for this was a lack of training. This reflects their personal experiences, as an overwhelming majority of the participants had not received any formal IL training during their own ITE, or any training which they considered as similar. These findings echo those of Lee et al. (2012) who also reported a lack of IL training on teacher education programmes and that the teachers they surveyed felt unprepared to teach IL.

As no pattern emerged of IL instruction evident in some ITE courses but not in others, it seems there is a general lack of IL skills instruction in ITE throughout the UK and NI; certainly pre-service teachers do not seem to recognise IL skills in the content of their training. In terms of CPD, the majority of teachers had not received any work place training that was labelled as IL, but a small proportion reported receiving similar training under another name, such as study skills training, ICT skills training, communication skills training and so on. This highlighted that shortcomings in terms of initial training are not remedied by CPD training made available to teachers in their workplaces. Moreover, the range of terms used to refer to IL skills in schools emphasises the differences in the terminology used in the LIS and the education sectors.

The terminology was a suggested reason for teachers' unfamiliarity with IL and was the second most frequent answer cited in response to why teachers in general would not be familiar with the label and might think of these skills under different names. Williams et al. (2014) similarly reported that the terminology associated with IL is not well known known in other sectors and that other terms are often used to refer to the concept. Smith (2013) noted that confusion around the term 'IL' emerged as the main theme in her study on teachers' understandings of the concept. As mentioned earlier, the terminology used in this study was given careful consideration and by

referring to the concept in this way, the difference in how these skills are understood by teachers was highlighted throughout the study.

The choice of the term IL meant that participants in the study were prompted to talk about the differences in the terminology used in different settings. Findings indicate that in schools in NI, teachers have a variety of different names for IL and think of the concept in different ways. One influence on this appears to be how the skills were introduced, as many teachers were still using the terminology that had been used in their own ITE. For example, those who had received 'library skills training' or 'study skills training' continued to refer to IL in this way. While teachers cannot be expected to be aware of the terminology of IL prevalent among librarians, they nevertheless should be aware of the importance of these skills for themselves and their students. The current findings provided evidence to suggest that they generally were not familiar with the concept and had little or no knowledge of it prior to participating in this study.

The absence of the term IL in the NI Curriculum is highly relevant; while it was concluded that the concept does not feature prominently in the curriculum, the problem more specifically may lie within individual subject content and the fact that IL skills are not overtly assessed. Teachers are under pressure to meet curriculum requirements and expectations relating to grades and performance, a lack of time further exacerbates the problem and results in negative practices such as spoon-feeding, which effectively deprives students of opportunities to develop IL skills in the classroom. The curriculum neither encourages teachers to fully recognise and/or become aware of IL, nor provides the impetus of assessment to encourage them to address it in the classroom.

A number of theoretical, practical and policy implications can be derived from this research. First, teachers are not in a position to provide IL skills training if they themselves do not possess knowledge of IL and developed skills. A lack of skills has been highlighted in other studies which have referred to the detrimental effect this has on teacher practice and IL skills instruction in schools (Asselin & Lee, 2002; Stockham & Collins, 2012). Our findings suggest that the majority of the sample possessed underdeveloped IL skills, but also that they overestimated their information literacy (in some cases, massively so). Initially, library anxiety theory and a lack of confidence were suggested to explain a lack of IL skills; it was thought that one of the reasons for teachers' lack of skills could be that they experienced feeling of anxiety and uncertainty when seeking, accessing, evaluating and using information, and that they would avoid asking for help as they feared revealing their inadequate skills. Instead, most of the respondents in this study exhibited misplaced confidence in their IL proficiency by rating their own skills as good, very good or excellent. This finding therefore challenges the suggestion that a lack of teachers' IL skills may be due to lack of confidence leading to avoidance (Moore, 2002; Mokhtar & Majid 2006; Probert, 2009).

The responses to the IL skills assessment section of the questionnaire, which provided only a very basic assessment, rather shockingly demonstrated very limited skills, with the majority of participants answering three out of four questions incorrectly. This finding is congruent with those in other studies (Korobili et al., 2011; Lee et al., 2008). A statistically significant relationship was found between the respondents' test scores and how they rated their skills, with those who rated their skills highly being more likely to score poorly on the assessment, suggesting an over-estimation of skills and abilities. Similar results have been reported in the existing literature (Latham and Gross, 2007; Korobili et al., 2011).

The lack of developed IL skills also has negative connotations for teachers' professional practice. As well as not being able to provide IL skills instruction, teachers will not be able to properly engage in CPD if they are not information literate. There is a government expectation that teachers inform and improve their practice, but other studies have found that a lack of IL skills may limit the use of research information (Williams & Coles, 2007). It is important therefore that teachers are information literate for their own professional development as well as for their students.

8. Conclusion

This survey of a sample of post-primary school teachers in NI generally found that they are not familiar with the term IL, and that they think a lack of training along with unfamiliar terminology are reasons for widespread lack of knowledge of the concept amongst teachers. The majority of survey respondents did not provide IL skills instruction or collaborate with their school librarian, despite a significant proportion believing that IL should be taught by teachers *and* librarians. They believed IL is included in the curriculum but that this terminology is simply not familiar to teachers. However, despite generally robust confidence in their own IL skills, when these were tested not only were many of the sample unable to respond correctly to very basic IL questions, but there was a statistically significant association found between lower scores and higher self-rated IL skills. This finding suggests that overconfidence, rather than anxiety leading to avoidance, may be a barrier to teachers improving their IL skills. This is a matter of considerable concern; without these skills teachers are unlikely to be competent to develop them in students.

This study has confirmed that IL is not a well-known concept in the education sector and the profile of IL skills as important lifelong learning skills in this field needs to be raised, particularly amongst teacher educators and teachers so that they and their students benefit from effective instruction and leave school possessing developed IL skills. The majority of the teachers who participated in this study reported receiving no training that could be identified as IL during their ITE or in subsequent CPD. Moreover, the sample identified lack of assessment as one of the barriers to teaching IL, along with lack of time and the belief that IL was the responsibility of the librarian. Clearly, explicit reference to IL in the curriculum and assessment of IL skills might provide the impetus for teachers to address IL in the classroom, but the practice of 'spoon feeding' seems to be well established and may militate against progress on this matter.

This research also raised issues which signal other possible lines of enquiry; further investigation into teacher practice regarding the teaching of IL skills in the classroom, the working relationship between school librarians and teachers, further investigation of teachers' views of the NI Curriculum, students and IL on ITE courses and the place of IL in early years and primary education.

Overall, this research has provided insight into the views and practice of secondary school teachers in terms of IL and these findings are significant as so few studies on the IL skills of teachers and their awareness of IL have been conducted worldwide. They provide insight into how skilled these teachers were in terms of IL and how proficient they consider themselves to be. These findings have addressed a significant gap in the research in this area, and they are the first of their kind in NI. There is evidence in the literature that IL is critical for student learning and that teachers have a role in developing student IL skills, but to do this they first need to develop their own competences. Clearly they are not receiving enough support for this during their ITE. As well as including IL in ITE programmes and in CPD opportunities for teachers, IL should be included in a more explicit way in the NI Curriculum. In addition, an IL strategy and/or framework for NI, as exists in other countries, would undoubtedly be hugely beneficial in addressing these issues, thereby promoting the concept to the benefit of teachers and students.

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Appendix: Questionnaire

1. Welcome to My Survey

Thank you for participating in this survey. Please note that participation in this study is voluntary and you will not be identified in any way.

***1. Please tick this box to consent to participate in this study and to acknowledge that you have read and understand the information sheet which was included in the email inviting you to take part in this study.**

I agree to take part in this study and I have read the information sheet

2. Section A

Background Information

***2. How long have you been teaching for?**

1-5 years

6-9 years

10-19 years

20+ years

***3. What subject(s) do you teach? If more than one, please list your main subject first.**

***4. Which initial teaching qualification do you have?**

BEd

PGCE

Other (please specify)

***5. Where did you obtain your initial teaching qualification?**

Queen's University, Belfast

University of Ulster

Stranmillis University College, Belfast

St Mary's University College, Belfast

The Open University

Elsewhere (please specify)

***6. What type of school do you currently work in?**

Voluntary Grammar

Controlled Grammar

Maintained Secondary

Controlled Secondary

Integrated

Other (please specify)

3. Section B

Information Literacy and You

***7. Prior to reading the information sheet, were you familiar with the term 'information literacy?'**

Yes

No

Not sure

***8. Prior to reading the information sheet, did you understand the term 'information literacy' fully, as described in the information sheet?**

Yes

Somewhat

Not at all

9. If 'Yes', where did you primarily obtain your knowledge of information literacy?

Initial teacher training

Workplace training

Professional development i.e. through completing further qualifications

Personal interest

Other (please specify)

***10. What term do you use when you refer to this set of skills?**

Information literacy skills

Study skills

Library skills

Communication skills

Research skills

I don't have a name for this set of skills

I call them something else (please specify)

***11. Looking back to your initial teacher education, did you receive any formal training called information literacy training?**

Yes

No

12. If 'No', were you taught these skills under any other label?

No

Yes (please specify what this training was called)

***13. Have you received any training labelled as information literacy in your workplace?**

Yes

No

14. If 'No', have you received any training on these skills under any other label in your workplace?

No

Yes (please specify what this was called)

***15. Do you think teachers generally know what information literacy is?**

Yes

No

***16. Why do you think this is?**

4. Section C

Your information literacy skills

***17. What type of publication does the following reference indicate?**

Rockman, I. (2005). Successful strategies for integrating information literacy into the curriculum. In I. Rockman (Ed.), Integrating information literacy into the higher education curriculum: Practical models for transformation. San Francisco: Jossey Bass.

Journal article

Book

Book chapter

Newspaper article

Not sure

***18. What type of publication does the following reference indicate?**

Williams, D., & Coles, L. (2007) "Teachers' approaches to finding and using research evidence: An information literacy perspective." Educational Research, 49(2), pp.185-206.

Journal article

Book

Book chapter

Newspaper article

Not sure

19. If you were going to search for information on a comparison of education systems in France and Greece which search terms would you use? (maximum of 4 words in total)

*20. You are preparing class notes on the Olympics. Which of the following could you include without a citation?

An image of Usain Bolt

Facts you have read in a book about the Olympics that you have put into your own words

The date of the 22nd Olympic Games

Facts from a webpage

*21. How confident do you feel about retrieving information from print resources?

	Very confident	Confident	Not very confident	Not confident at all	I don't use this resource
Books	Very confident	Confident	Not confident	very at all	I don't use this resource
Print journals	Very confident	Confident	Not confident	very at all	I don't use this resource
Newspapers	Very confident	Confident	Not confident	very at all	I don't use this resource
Encyclopedias	Very confident	Confident	Not confident	very at all	I don't use this resource
Overall	Very confident	Confident	Not confident	very Not confident	I don't use this resource

I don't use this resource

Very confident Confident Not very confident Not confident at all

at all

***22. How confident do you feel about retrieving information from electronic resources?**

I don't use this resource

Very confident Confident Not very confident Not confident at all

Search engines Very confident Confident Not confident Not very confident at all I don't use this resource

Electronic books Very confident Confident Not confident Not very confident at all I don't use this resource

Electronic Journals Very confident Confident Not confident Not very confident at all I don't use this resource

Databases Very confident Confident Not confident Not very confident at all I don't use this resource

Overall Very confident Confident Not confident Not very confident at all I don't use this resource

***23. Do you use Wikipedia?**

Yes, for my own research

Yes, I share information from it with pupils

No, I don't use it

***24. How would you rate your information literacy skills?**

Excellent

Very good

Good

Average

Poor

Very poor

5. Section D

Information Literacy in the Northern Ireland Curriculum

***25. Do you think the skills labelled as information literacy here are included in the NI Curriculum?**

Yes they are included and called information literacy skills

Yes but they are not called information literacy skills

No they are not included

Not sure

26. Is information literacy addressed in your main subject?

Yes and it is referred to as information literacy

Yes but it is not called information literacy

No it is not addressed in my main subject

Not sure

***27. Is information literacy more prominent in the curriculum at different Key Stages?**

Yes it is more prominent at KS3

Yes it is more prominent at KS4

No it is the same at different stages

6. Section E

The role of information literacy in your teaching

***28. Do you provide any kind of information literacy instruction to your pupils?**

Yes

No

29. If 'Yes', for which year groups and in what way?

30. If 'No', what are your reasons for not providing information literacy skills instruction? Please tick all that apply

Too busy

The librarian does it

Someone else does it

It is not required

It is not present in the curriculum

It is not relevant

These skills are not assessed

I have never heard of information literacy

Other (please specify)

***31. Do you set homework tasks that require pupils to use their information literacy skills?**

Yes at KS3 level

Yes at KS4 level

Yes at KS3 and KS4 levels

No I don't

***32. Do you encourage your pupils to source information from certain resources? If 'Yes' please specify**

***33. Do you discourage the use of certain resources? If 'Yes' please specify**

7. Section F

Pupils and information literacy

***34. In general, in terms of information literacy skills would you say the pupils you teach are:**

Less skilled than you would expect them to be

As skilled as you would expect them to be

More skilled than you would expect them to be

***35. How do you think pupils should develop their information literacy skills?**

With the help of teachers

With the help of the school librarian

With the help of both teachers and the school librarian

Independently

All of the above

Other (please specify)

***36. Who do you think is responsible for providing information literacy skills instruction in your school?**

Teacher

School Librarian

Teachers and the school librarian

Other (please specify)

***37. Who do you think should be responsible for providing information literacy skills instruction in your school?**

Teachers

School Librarian

Teachers and the school librarian

Other (please specify)

8. Section G

School librarians

***38. Do you have a school librarian?**

Yes

No

***39. Do you collaborate with your school librarian?**

Yes

No

We don't have a school librarian

***40. How often do you take your classes to the library?**

Once a fortnight

Once a month

Once a term

Once a year

Never

41. If you take your classes to the library, who organises these visits?

I let the school librarian organise these visits

We organise the visits together

I approach the school librarian to organise these visits

42. Who decides on the content?

I decide on the content

The school librarian decides on the content

We decide on the content together

43. Who leads the class visits?

I lead the class visits

The librarian leads the class visits

We take these visits together

***44. Do you ask your librarian for help? Please tick all that apply:**

I ask for books for my pupils

I ask for books for myself

I ask for help with class projects

I ask for help with information literacy skills instruction

I ask the librarian to speak to my classes

I don't ask my librarian for help

Other (please specify)

***45. Have you ever discussed information literacy with your librarian?**

Yes, I initiated the conversation

Yes, the school librarian initiated the conversation

No

***46. Has anyone else in your workplace discussed information literacy? If 'Yes' please specify who**

***47. Do you know if your school librarian is professional and qualified?**

Yes, they are

No, they are not

I don't know if they are or not

***48. Does it matter if your school librarian is professional and qualified?**

Yes

No

49. Is there anything you would like to add?

Thank you for taking the time to complete this survey!