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Do students want a One-stop-shop to help them navigate their way around the maze of library resources? A Usability Study looking at the beta version of Summon, the new library search engine at the University of Huddersfield

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Do students want a One-stop-shop to help them navigate their way around the maze of library resources? A Usability Study looking at the beta version of Summon, the new library search engine at the University of Huddersfield.

A study submitted in partial fulfillment
of the requirements for the degree of
Master of Arts in Librarianship

at

THE UNIVERSITY OF SHEFFIELD

by

MARTIN PHILIP

September 2010

Structured abstract

Background

This study came about due to the researchers interest in the issues surrounding one-stop-shops in academic libraries. It was also heavily influenced by his employer, the University of Huddersfield, and their recent purchase of Summon, described by Serial Solutions, the company who developed it, as a web-scale resource discovery service. There is much written about library search engines, however there is a lack of usability-like studies focused on qualitative research, conducted on one-stop-shops particularly in UK academic libraries.

Aims

This study aimed to investigate if students want a one-stop-shop to navigate library resources, with a particular focus on the beta launch of Summon. The aim was to compare the findings generated by this research with the current literature on one-stop-shops.

Methods

The study took a mixed methods approach and was pragmatic in the implementation of the methodology thus focus groups with three distinct elements were conducted. A questionnaire was developed, based on research conducted at Dartmouth College, New Hampshire, to find out participants existing searching habits. A search task, inspired by usability tests, was conducted, where participants were observed using Summon without instruction. Group discussions concluded the focus group, which aimed to try and determine what participants thought of Summon, as a cutting-edge, one-stop-shop. A total of thirty-three students, all from the University of Huddersfield, took part in this study.

Results

The study found that most participants, when searching for academic information, adopt information-seeking behaviour that mirrors the way they use web search

engines. When observed using Summon and when given the opportunity to feedback in the group discussion, most participants found it to be easy, intuitive, and to be very quick at retrieving lots of results. There was, however, slight reservation from participants wanting to conduct a more advanced level of searching and during this study there was little and often no use of Summon's additional features.

Conclusions

The findings from this study, albeit a snapshot of participants using Summon, along with much of the literature, suggest that one-stop-shops, as a way of accessing academic library resources, are here to stay. This study shows, and the fact that more universities are starting to sign up as customers, that the participants like Summon and that it seems to provide them with what they need for their academic research. Future work could focus on issues surrounding one-stop-shops and information literacy.

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Introduction

Due to the proliferation and variety of electronic resources that are now subscribed to by university libraries, much of the literature reports that students are confused by the complicated research landscape. Some of the literature (Morrison, 2005) and software companies, such as EBSCO, propose that students want a Google-like, one-stop-shop resource discovery tool to help them best navigate library resources and retrieve relevant results.

The simple answer is that, based on the author's experience, students do want a Google-like product that they can use for their studies. However it is clear from the literature, that it is not so straightforward. The fact is that libraries and major bibliographic companies have, for years, been seeking and developing products that aim to help library users easily access the wealth of information, both physical and virtual, which is now part of academic libraries' collections.

There is a debate surrounding the notion of whether the current one-stop-shops on the market are even good enough to provide students with an academic alternative to Google Scholar. Historically, libraries have provided users with a range of ways to access electronic resources. Encrypted word documents, web pages with links to respective resources and federated search engines have all been attempts by libraries, publishers and software companies to come up with such a system. They all shared the aim of attempting to construct a system that comprehensively searches library resources but does so in a way which is intuitive, fast and provides relevant results.

There is also another debate around one-stop-shops in general and whether or not it is the type of product that should even be developed for academic research. This is because there are concerns from some academics that one-stop-shops encourage a crude, lazy approach to research (Talent, 2004).

The research for this dissertation took place at the University of Huddersfield, which is the first UK University to purchase Summon and also where the researcher is employed. Summon is a 'next generation' resource discovery product from Serials Solutions, that "provides a Google-like search experience, allowing researchers to use one search box to discover credible and reliable library content."¹ The beta version of Summon was launched in March 2010 at the University of Huddersfield with the official launch made in July 2010. In the UK, Summon has previously been beta tested at the University of Liverpool and been purchased by the University of Northumbria.

Building upon the literature, the aim of this dissertation was to find out whether students do indeed want a one-stop-shop. The research was conducted in the vain of a usability study seeking to discover how students make use of one of the newest one-stop-shops on the market. Although there have been some studies conducted looking at federated search engines, very few have yet been published with regards to British students using such a cutting-edge product.

Aims and Objectives

Aim

The purpose of this study is to identify if students want a one-stop-shop to navigate library resources, which provides an effective tool with which to conduct academic research. The aim is to compare the research findings of students' use and observations of Summon with the current literature surrounding the notion of one-stop-shops in academic libraries.

¹ <http://www.serialssolutions.com/summon-features/>

Objectives

The following objectives have therefore been identified:

1. To determine, through a more thorough search of the literature, the general consensus of opinion with regards to the use of one-stop-shops within academic libraries.
2. To examine the existing search behaviours of students at the University of Huddersfield. (Questionnaire phase)
3. To observe how students use Summon. (Observation phase)
4. To explore participants initial responses to using Summon as a (potential) design of a one-stop-shop. (Group discussion)
5. These objectives will be achieved by conducting focus groups that will include three elements:
 - Questionnaires collecting demographic information and data with regards to participants' pre-focus group search behaviour.
 - Observations (usability test) to allow participants to use Summon in a naturalistic situation.
 - Group discussions for participants to feed back on their experience of using Summon.

To achieve the above objectives, this study has to answer the following research questions:

1. Are current one-stop-shops of sufficient quality for students to adopt them as their chosen method of academic research?
2. Is a one-stop-shop the type of system that is appropriate to meet the needs of students for their academic research?

A study such as this could be seen as having a usability study likeness to it. This will have implications for the ways in which the major stakeholders, students, librarians and academics, regard one-stop-shops and thus better inform the role they have in a students university education.

Literature Review

The literature review will begin by discussing the variety of writings published that address the issue of one-stop-shops being used to search library collections. It will go on to discuss further themes that have emerged from the literature including the reasons why there are proponents for and against these types of systems.

The literature, with specific reference to Summon, is understandably limited at this stage with the product having only been released in early 2010. Much, however, is written about one-stop-shops, library portals, federated search engines and other cross-searching resource discovery products that have, in the last few years, become the topic of a great deal of discussion in academic library circles.

The case for one-stop-shops

One-stop-shops have been defined by Gibson, et al (2009: 118) as a “single interface allowing users to simultaneously search multiple resources.” In most cases, certainly when discussing academic libraries and their resources, a one-stop-shop provides users with access to subscribed content. Summon allows the user to search both the electronic and physical library. In reality however, and due to a current lack of technological advancement in this area, one-stop-shops are generally only capable of comprehensively searching within the content of journal articles. Other resources, such as eBooks, books and subscribed web sites can often be searched but by title only and therefore they do not provide such relevant results.

Much of the literature and also the perspective on which this dissertation is founded, to a large extent, begins with the same premise; How can academic libraries respond to the changing user expectations of how one should be able to access the rapidly growing and fragmented collection of electronic resources? (Myhill, 2005; Tallent, 2004; Stevenson et al, 2009)

As more and more resources provided by the university library become available electronically, libraries have sought to provide users with the best possible ways of accessing these materials. Traditionally, these resources have been made available, as Seaman and Pawlek (2009: 74) note, via a “confusing array of services, indices, destination sites and catalogs.” Many library users, as evidenced by much of the literature (Korah & Cassidy, 2010), therefore prefer using a commercial search engine when conducting academic research. This is primarily due to their simplicity, despite students often being aware of the poor quality of resources found on the Internet.

Morrison (2005: 5) makes it clear that library users are getting increasingly frustrated by the how poor, they believe, the library electronic landscape to be and this in turn leads them to “want to simply Google for everything.” Indeed Griffiths & Brophy’s (2005: 539) research makes it clear that, “commercial Internet search engines dominate students’ information-seeking strategy.” Morrison (2005), like others from the literature, believes that this issue needs to be addressed.

Many libraries and library software companies alike now appear to recognise that library users struggle tremendously with the current arrangement whereby they are forced into using multiple access points to retrieve the information required. Myhill (2005) comments that companies, such as Serial Solutions, EBSCO, Ex Libris and Innovative Interfaces, seek to provide a solution to the problem of users not engaging with the libraries resources. They have responded by developing federated search systems or metasearch systems that, as Karah and Cassidy (2010: 325) put it,

“aim to search a collection of databases from one interface and present one set of results, thereby reducing the amount of time and energy that a researcher must invest in learning and using individual database interfaces.”

A substantial amount of the literature suggests that users, predominantly undergraduate, want their academic searching experience to be the same as their web search experience. (Tallent, 2004; Myhill, 2005; Stevenson et al, 2009)

Whether the literature is an opinion piece or peer-reviewed research, the conclusion seems to be that the current systems provided to search academic resources could certainly be improved upon. The consensus of those tasked with managing or developing resource discovery systems, is that Google is seen as the benchmark of how a search engine should be. Literature suggests that it is also the standard by which users now measure their academic search engine experience. In many cases, (Gardner, 2005; Marcum, 2005; Tallent, 2004) Google is generally regarded as the academic library's main competitor.

It isn't just Google's web search engine that appears to be discussed throughout the literature, but Google Scholar as well. (Gardner, 2005) Scholar, which is still in beta, was launched in 2004 and as stated on its website seeks to "provide a simple way to broadly search for scholarly literature."² There aren't however many user studies on Scholar, (Gardner, 2005; Haya, 2007) and the literature seems somewhat undecided on Google's attempt at academic searching. Gardner's (2005: 44) study shows that when compared to fee-based information retrieval systems, Scholar fares poorly, yet students still "flock to this popular interface". Whereas Haya's (2007: 373) comparison between Metalib and Scholar found that "Scholar exhibited higher usability" than when Metalib was implemented at Stockholm University.

Much of the literature appears to be in the form of case studies. (Lewis, 2002; Stubbings, 2003; Tallent, 2004; Myhill, 2005; Stevenson et al, 2009) They focus predominantly on academic libraries that are either considering implementing or in the process of implementing one of these resource discovery products. For those implementing a new resource discovery product at their library, Stubbings (2003) helpfully compiles a list of bullet points which contains the feedback from Loughborough University's implementation of Metalib, a federated search engine. Factors that were felt to have a major impact on the success of implementing a Summon-like product included the look and feel of the interface, branding contents (Stubbings, 2003; Tallent, 2004).

² <http://scholar.google.co.uk/intl/en/scholar/about.html>

In many cases when companies have attempted to develop a one-stop-shop, the end result has been woefully inadequate and, at times, confusing (Seaman, 2009). Lauridsen et al (2009) states that there are many well-known and mature products that allow library users to search multiple databases at any one time. However, research suggests that these systems are often slow and complicated for users to use, which in turn causes users to resort to making use of well known Internet search engines.

Despite many libraries signing up to the idea of federated search engines, perfectly good products can also be implemented poorly, which is why Stubbings (2003) aforementioned implementation experience is so helpful. However, Tenopir (2009) makes the point that students are still asking “Why is Google so easy and the library so hard to use?” Gibson et al (2009) shares his experience, much like Stubbings (2003), of implementing a federated search engine at Memorial University, Canada. He stresses the importance of how you implement the product; particularly as there is often a limited opportunity to customise various features. He warns that to deliver a one-stop-shop of a certain standard, the institution needs to make sure they conduct a usability study before it is launched.

Some of the literature details how there are those that have the opinion, such as Kennedy (2005), that it is fine for students to use Google for academic purposes and not purchase a purpose-built library one-stop-shop such as some of the ones we have mentioned. Kennedy (2005: 20) feels that “almost certainly [students] are going to use [Google] first, and, in many cases, it’s all they are going to use. So they might as well know how to use it effectively.” Kennedy (2005: 20) clarifies herself by stating that she teaches library users how to use Google ‘properly’, letting them know about “phrase searching and how to choose good keywords.” She also lets them know about the quality issues with regards to Google and accordingly shows students how to use Google Scholar for academic information.

This is also an approach adopted at the University of Sheffield. When undergraduate students begin university, as part of their induction, they are shown the library catalogue and individual databases that house the electronic collections. Sheffield hasn't purchased a one-stop-shop; students are therefore encouraged to make use of Google Scholar for when they conduct academic research. Students are shown how they are able to search and retrieve scholarly material. On the results page, Google Scholar clearly indicates if Sheffield subscribes to a particular article or not.

Some of the literature suggests that apart from wanting to see students engage more with research, which would hopefully improve their learning, academic libraries desire to implement one-stop-shops is also motivated by the continuing financial pressure they are currently under. Libraries budgets are being cut annually whereas subscription costs on journals and web resources are rising which means something has to give, subscriptions, for example, can't keep being automatically renewed (Stubbings, 2003).

One-stop-shops demand an annual fee much like journals. However what they provide in return is the opportunity for libraries to make their resources more accessible than ever before. Lauridsen et al (2009: 143) makes it clear that "many electronic collections dwarf their print counterparts" and therefore in monetary terms as well as quantity. However many libraries still insist on giving more prominence to their physical collections which is clearly a waste of expenditure and a practice which libraries cannot afford to continue in the current financial climate.

Some of the literature (Lauridsen et al, 2009) shows that without a one-stop-shop, little known publications are used rarely, yet many of these titles are of excellent quality and highly specialized. It may be that some of these titles are hidden under an untellable name but within indexed within a one-stop-shop, all peer-reviewed material would be equal. The more resources that are accessed, however, the less likely they are to have their subscriptions cancelled. We have also seen that the majority of library expenditure is on electronic resources and so it makes good

financial sense to promote these resources and make them as accessible as possible, which is, what a one-stop-shop would be able to do.

Lauridsen and Stone (2009: 142) argue that “what is needed is a true one-stop-shop approach that can be customised based on users’ needs.” Although Lauridsen et al (2009) would undoubtedly agree with the arguments that have been presented thus far from the perspective of students, her article addresses the concept from a more technical perspective. The University of Huddersfield, for example, has three separate knowledge bases. This is very time consuming for staff to maintain but also extremely frustrating for the user as, inevitably, they are the ones who are faced with three separate interfaces which can often cause confusion. As aforementioned, this can result in students choosing not to spend time familiarising themselves with such interfaces and returning to Google. Lauridsen et al (2009) is very much in favour of implementing a one-stop-shop that is ascertained through usability testing rather than a product that is decided on behalf of the user.

The case against one-stop-shops

What is also clear from the literature is that not everyone believes one-stop-shops are the type of system academic libraries should be seeking to provide. Some are unconvinced by the notions of one-stop-shops; not, for the fact that they won’t be able to perform adequately, but that the type of behaviour they could encourage seems at odds with the goals of higher education. The University of Sheffield (2010), for example, makes it clear to prospective undergraduates on its website that university is very different to school, “You are expected to be independent and have a curiosity about your subject.” Admittedly, this is a snapshot from one university website, but it would be safe to assume this would be the case across all HE institutions. Equally, many would disagree with the aforementioned Kennedy (2005), that searching for academic information is very different to searching for everyday information on the web.

Talent (2004) highlights some of the reasons users dislike the library world's desire to come up with their own Google-like facility. One reason would be that a one-stop-shop encourages a 'quick and dirty' approach to searching rather than effective academic searching which, one could argue, requires students to have a good understanding of the type and quality of the resources they are retrieving. Talent (2004: 71) introduces the concept of 'satisficing', which is when an individual wants to do "the minimum requirements necessary to achieve a particular goal." This type of search behaviour is vastly different to the kind expected from good quality students, who, universities would hope, would understand how to build effective search strategies and gain the experience to be able to properly evaluate results.

Stubbings (2003: 26) continues this theme, believing that one-stop-shops could have a negative impact on students and that they "may encourage poor searching techniques from them." Myhill (2004: 16) agrees stating that "meta-searching is simply papering over the cracks" and doesn't address the issue of information literacy, whereby students are taught to develop the transferable skills as aforementioned.

Tenopir (2009), like many, is concerned that one-stop-shops such as Summon miss out the "deep element of interactive discovery that combines research with the process of search." Tenopir sees research as more than just settling for the article that appears to be the most suitable but as something which should encourage rigorous analysis rather than blind acceptance.

Conclusion

In conclusion and to summarise, it would be fair to say that the literature with regards to one-stop-shops is decidedly mixed and there isn't a clear consensus of opinion with regards to their use in academic libraries. The output can generally be split into three camps; those that are strong advocates for one-stop-shops, those that are strong advocates against, and those that sit somewhere between the two.

The latter group often state that they see one-stop-shops as a good alternative to Google but not for a more advanced level of research such as systematic reviews.

We can see the ways in which academic libraries have provided access to their subscribed electronic resources over the years. We've also seen how libraries, within the last decade or so, by acting upon user feedback and by analysing usage data, have sought to make their electronic resources much more accessible and easily searchable.

Through the literature, we've seen many libraries that have either implemented or are planning to implement a resource discovery search engine and that is where the literature feeds into this research project. This dissertation is seeking, through observations and group discussions, to find out if students actually want a one-stop-shop. In this particular study, we will be examining if the beta version of Summon, the newly implemented system at the University of Huddersfield, meets the user needs for an academic search engine.

Methodology

The aim of the research was to identify if students want a one-stop-shop to navigate library resources, which provides for them an effective tool with which to conduct academic research. The aim is to compare the research findings of students' use and observations of Summon with the current literature surrounding the notion of one-stop-shops in academic libraries.

Three of the objectives of this research and the methods used to meet them are as follows:

1. To examine the existing search behaviours of students at the University of Huddersfield. (Questionnaire and group discussion phase)
2. To observe how students use Summon, an example of a one-stop-shop that will be used in this study. (Observation and group discussion phase)
3. To explore participants initial responses to using Summon as a (potential) design of a one-stop-shop. (Observation and group discussion)

In order to gather the right type of information required for this study, a case study-like approach was used. This was because the research was based at one institution, the University of Huddersfield, and was focussed on looking at how one particular product was used. It was clear, however, that much of the literature borrowed heavily from usability studies. It was felt that equally, this research was similar to a usability study except the developer of the product was not conducting the research, the customer was.

Krug (2006: x), a web usability consultant with over ten years experience working with blue chip clients, states that user testing on your website or product, is

something that is invaluable and should be conducted regularly, not just at the implementation stage. He goes on to state that usability testing always confirms things you already know, teaches you some things you didn't know and provides a big surprise that allows you to improve the product significantly. The University of Huddersfield will make use of the findings from this research because from their perspective, Summon is a product they want to continue to develop and support in order to provide the best possible one-stop-shop for users. This was another reason why a usability-style-study was deemed most appropriate. Usability testing literature shows extensive testing and tweaking of a resources' interface takes place in most cases. Armstrong et al (2006) note that academic libraries would greatly value conducting such procedures, as this would definitely improve the overall implementation of a product such as Summon.

This study appears to fit into what is described by Avery et al (2007) as 'task-based testing'. This is because the study involves observing participants, in as natural a scenario as possible, using the product, which in this case is Summon. The participants will be asked to make use of Summon as they would any search engine, for example, searching for specific information in order to write an assignment. If, for whatever reason, they cannot come up a topic they wish to search for, a selection of questions from each school will be provided. The information retrieved by each participant was not measured at any time.

Sampling

Due to the nature of this piece of research and the limited time that was allotted for what could quite easily have been a much more extensive study, the sample method used when selecting participants could be described as ad-hoc. The research needed to recruit library users (students) of the University of Huddersfield who were willing to participate in a short observational exercise and group discussion. To get a broad sample range, the researcher initially wanted to sample participants evenly, from all levels of study, year and school. Early on in the recruitment process, it was clear that this was going to prove unrealistic. This was

due to the researcher's own time constraints and that most students had left for the summer vacation. In somewhat crude fashion, therefore, the participants used in this study were simply the only students that the researcher was able to recruit. This resulted in the participants being of mixed levels.

Since the University of Huddersfield launched the beta version Summon in March 2010, there has been a user survey located on the homepage. Some of the participants for this study were students that volunteered via this survey and left their name stating that they would be happy to participate in further research if necessary. This could prove to be a limitation as the students that left personal details are probably not your average student, they may be slightly keener in terms of researching for their projects than most students, and could therefore be very competent when completing all parts of the focus group. Therefore the data gathered would potentially not be a reflection of the student population as a whole. It is hoped, however, that the findings could still be a valuable insight into students' relationships with a one-stop-shop.

There was the possibility to recruit participants from the school of Computing & Engineering, at the University of Huddersfield, where the author has been the subject librarian since September, however this didn't result in being offered any participants. The Research Office, at the same institution, was also due to be contacted to specifically recruit postgraduate students, however this never materialised. Ideally, the researcher wanted twelve participants representing each level of study to show how they use Summon. The researcher is fully aware, in hindsight that the recruitment process could have been dealt with differently.

One thing to note is that for this study is that there were a high proportion of participants who were international students. This was because a lecturer from the accounting department, who has a particular interest in the library, wanted his international students to take part in this research. During the research there would often be difficulties explaining to these particular participants what was expected of them. The fact that English isn't their first language definitely had a bearing on the

results, which needs to be taken into account when looking at the conclusions and recommendations.

Methods

Quantitative and Qualitative

In order to explore the research objectives fully, this study used a mixed methods approach to the research. It is hoped that a more thorough, and complete overview would be achieved using this method. Indeed Bryman (2008) argues that for qualitative research to overcome the problem of generality, this can be solved by adding quantitative findings. For this study, the qualitative findings from the group discussion will be analysed with the quantitative statistics gathered from the questionnaire and observations. It was hoped that, as the research sought to explore and understand library users' attitudes and behaviour towards searching but specifically one-stop-shops, clear themes would emerge by comparing and contrasting these different types of findings.

Due to much of the inspiration behind this research being taken from usability studies, it was decided that the format of the research should be focus groups. Much of the literature labels focus groups as specifically 'group discussions', however for this study, 'group discussion' was just one of the three components. It was therefore decided that the individual events would be labelled 'focus groups' which included the three components, questionnaire, observation and group discussion. Flick also (2009: 204) points out that a main reason this method is being used for this study is that "focus groups can be seen and used as simulations of everyday discourses and conversations", and therefore generate which good quality results.

As aforementioned, there were three components to the focus groups, and in total, they lasted approximately an hour and a half. Initially the participants were presented with a demographic questionnaire to obtain key details. After the questionnaire, the participants were asked to complete a structured task in order

for the researcher to analyse how they used Summon. Following the structured task, the focus group concluded with a thirty-minute group discussion.

Data was collected from the demographic questionnaire, the observations of the structured task and the group discussions. Although the data collected appears relatively standard, there is the opportunity to, as Bryman (2008: 282) says, "probe beneath the surface in order to ask deeper questions about what is happening". Due to more than one source of data being collected, it has been possible to see themes emerging when analysing the results.

Research Techniques

Questionnaire

The participants completed the questionnaire before taking part in the search task and group discussion. The questions sought to collect some demographic information about the participants such as their name, course, level and year of study. Also included in the questionnaire will be a number of general questions enquiring about their experience of using resource discovery products. The questions will be based on those asked on the online survey which can be found in the appendix. Influence will also be gained from Dartmouth College, New Hampshire, who were involved in the early stages of the development of Summon. It was hoped that these results would establish a context for the findings that followed.

Flick (2009: 164) explains that the benefits of including a short questionnaire such as this are that it allows "you to collect the data, which [is] less relevant than the topics of the interview itself before the actual interview" and therefore it doesn't take up too much time. In this case, a structured task and group discussion are being used rather than interviews.

Observation

The structured task was designed to replicate a real situation of a participant using Summon to find resources for their studies. This element of the research took inspiration from Gibson et al's (2009) usability study of Memorial University's (Canada) federated search engine. Gibson et al (2009) conducted a search based task to assess if the search engine was clear and had consistent navigation. The aim was to evaluate the use and perception of the search engine based on its effectiveness, efficiency and satisfaction.

For this study, participants were asked to use Summon as if they were required to conduct research for an assignment. If they preferred, they could use the sample questions provided. For the purposes of this study, structured observation will be the technique used as the aim will be for each observer to record notable behaviour that the participants exhibit, using an agreed checklist. There will be one facilitator with two observers who will also act as note takers. This would allow the facilitator to get the most out of the discussion and keep it flowing without the pressure of note taking.

The study was a non-participant observation because although the observers were in the social setting of the participant, it was intended that they would rarely, if at all, participate in the tasks. Participant observation wasn't chosen as it was felt that if the observers were too closely involved there would be the chance they would influence participants, which would affect the results. It would also mean we wouldn't have been able to see how the participants get on with Summon in isolation which was a key factor in this project. The participants were systematically observed in terms of a schedule of categories.

Bryman (2008: 260) notes, "a clear focus [for observers] is necessary" so that the observers knew precisely who and what was to be observed. It was also important to inform the participants who the observers were and what they were doing so as not to make them feel uncomfortable. Bryman (2008: 260) points out that problems with structured observations for research can occur as observers "sometimes

require a certain amount of interpretation”. To overcome this, for this study, a clear checklist for observers was provided and they were debriefed about what was expected of them in their role and how it related to the research that was being carried out.

It was decided that the structured tasks were going to be observed because, alongside the questionnaire and the group discussions, as Flick (2009: 222) puts it, they allowed us “to find out if [Summon] actually works.” It is was felt that this provided better quality results and, as the findings show, provide an insight into how users behave when using resource discovery products. These findings can therefore be taken into account when designing one-stop-shops for library users.

Lasting around fifteen to twenty minutes, the participants used Summon to conduct some research. It was hoped that there would be one observer for every two participants; however, in reality this wasn’t always the case. Due to a misunderstanding with the lecturer concerned, there were many more participants than expected meaning there wasn’t enough observers. For the this group in particular, there was approximately four participants for every observer meaning they undoubtedly would not have been observed as thoroughly as in a more ideal setting.

The initial section of the observational checklist centred on body language and how participants appeared to behave when using Summon. Following that was series of more specific information seeking-related behaviours that were to be marked on the observational checklist. This part of the methodology was inspired by Stephan et al’s (2006) usability study at the University of Mississippi’s library homepage. The researcher measured participants’ behaviour such as the number of clicks they made on each icon and any satisfaction, signs of frustration or indecision they exhibited.

Group Discussion

Following the structured task, the focus group concluded with a thirty-minute group discussion. This was again inspired by previous usability studies found in the literature. Brantley et al (2006) note that the main benefit of having group discussions is that the user comments recorded are extremely useful in terms of identifying navigation and layout problems. It is hoped that like the University of Illinois, the data gathered from this study will enable the University of Huddersfield to evaluate Summon and its intuitiveness.

The group discussions were each recorded using a digital Dictaphone, which then allowed for an exact transcript to be produced. There were six groups in total that needed to be transcribed and the majority of the comments were summarised and presented in the findings section of this dissertation.

Ethical Aspects

The practicalities of the study were worked out in liaison with the University of Huddersfield. Huddersfield recently purchased Summon and will be using the findings for their own report and potentially for further research. The findings will almost certainly feed into much of Huddersfield's own product development.

University of Huddersfield library has purchased Summon to increase the usage of their resources and feedback is most desired from students, who make up the largest group of users. Because the beta version of Summon has been in use since March of this year, there are a number of users that have already completed feedback forms and the ongoing online survey. Some users that completed the survey agreed to participate in further research related to the implementation of Summon, hence their inclusion in this study. These users are a mixture of undergraduate and postgraduate students and will be contacted for the purposes of this study. A number of students, employed by the university as casual shelving staff, participated in this study.

Informed consent was obtained from each participant before they took part in the research. The findings of the research will remain confidential with participants only being identified by their course, level and subject rather than personal details. As aforementioned, the group discussions were recorded and this was clearly stated on the consent form given to participants beforehand. At this point the participant was asked to sign their consent form if they were willing to take part in the study. The participants were free to withdraw from the study at any point. All recorded media will be destroyed after the findings have been collated and written up.

Findings

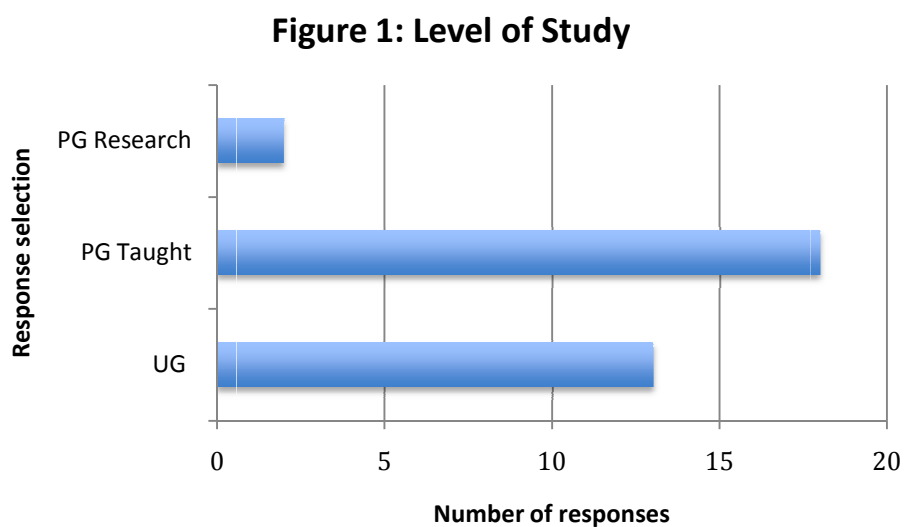
Introduction

This chapter presents the findings of the research and provides analysis. The data collected from the questionnaires, observational search task and group discussions are presented separately with commentary. Several themes emerged from these activities, reflecting the students' thoughts on Summon which are also applicable to their opinions on one-stop-shops in general.

Questionnaire

The participants completed the questionnaire (see appendix) before taking part in the search task and group discussion. The questions sought to collect some demographic information about the participants such as their level and year of study. The second batch of questions was designed to find out the current searching habits of the students. It was hoped that these results would establish a context for the findings that followed.

Figure 1 shows that the majority of participants used in this study were Postgraduate taught students (MSc International Accounting students), with other participants being volunteers.



In hindsight, it is clear that the data collected with regards to participants' year of study is misleading. Despite Figure 2 showing most participants being in their first year of study, the majority of these will be the aforementioned MSc students. These students are Postgraduates and they should have more experience of using library retrieval systems than first year undergraduates for example. Therefore the results do not provide particularly reliable information.

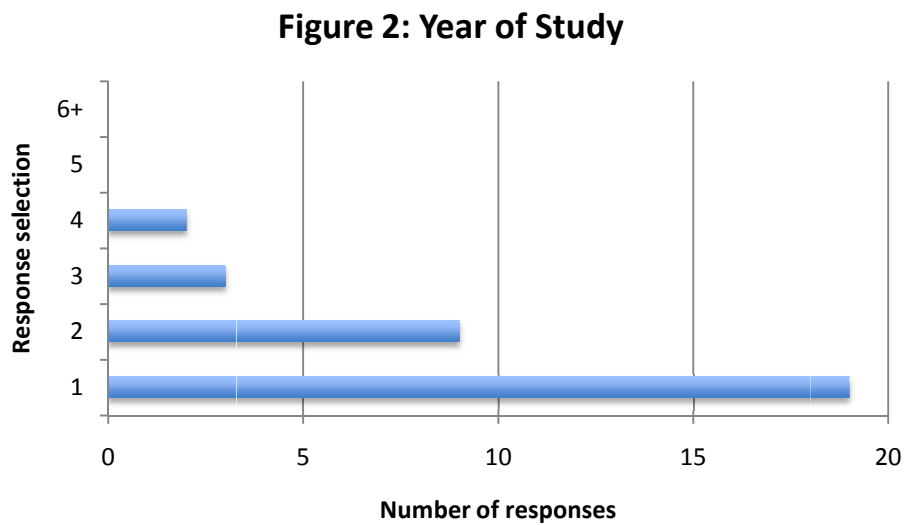
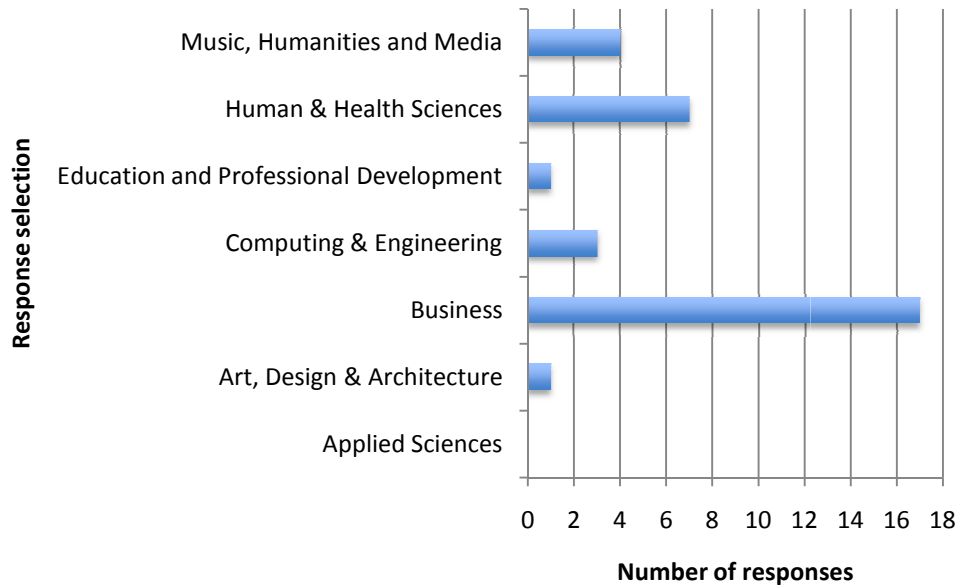


Figure 3 reveals that the majority of participants were from the Business School. Again, this was because of the sample selected from the MSc course. All other participants volunteered and were recruited via a survey on the Summon homepage. The second largest sample group was Human & Health Sciences who all volunteered. This suggests that participants from this school spend a lot of time using electronic library resources or at least, are student interested enough to volunteer for this study.

Figure 3: School



The first information related question asked in the questionnaire is shown in Figure 4. The vast majority of participants stated that, when searching for information for their studies they type one or two words into the search box. This suggests that even before the participants had used Summon and discussed their thoughts on it, when searching for academic information, they already search as if they are using a Google-like product.

Figure 4: When I search for information for my projects I type one or two words into the search box*

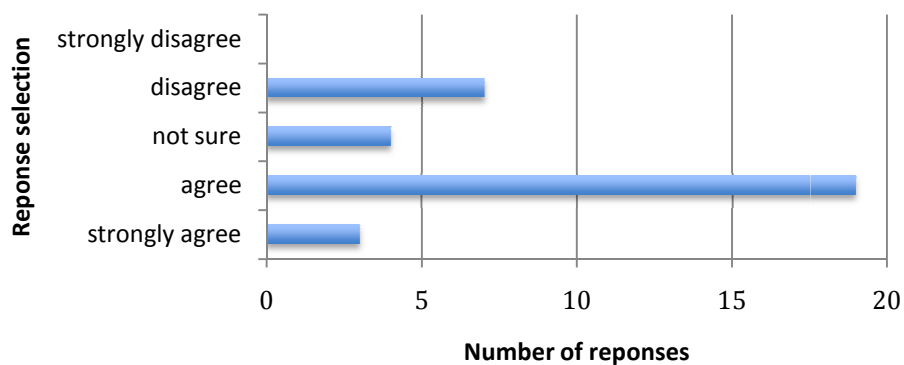
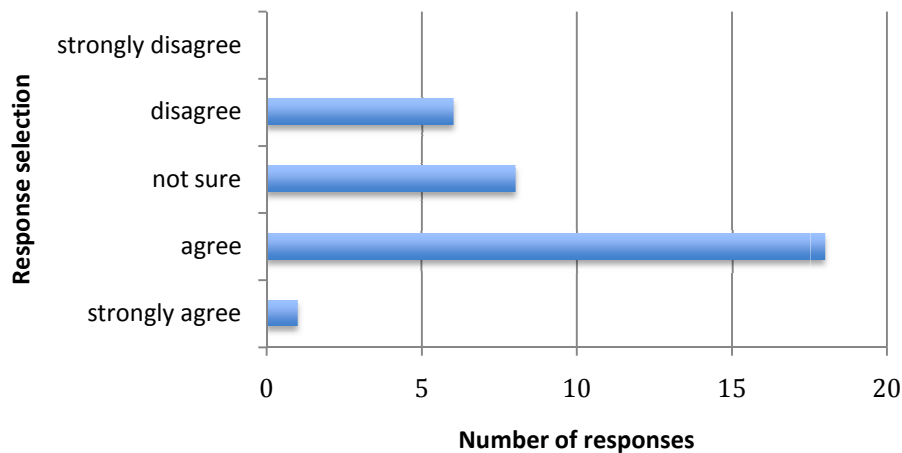


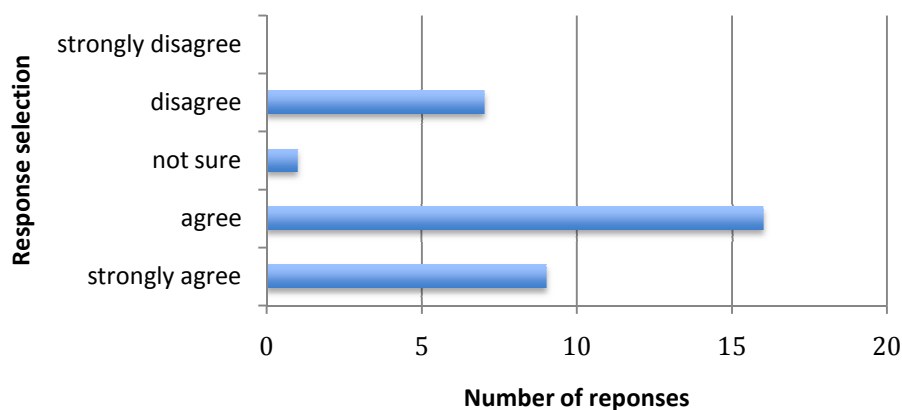
Figure 5 shows that most participants use the advanced search feature on academic databases or equivalent resources. There was a similar amount of participants that weren't sure or disagreed with this statement. For those that are unsure it could be that they have made use of this feature before but unknowingly.

Figure 5: I use advanced search*



Sixteen participants stated that they use Metalib or an equivalent library retrieval system more than once a week. The second most popular response was that participants strongly agreed that they used Metalib more than once a week.

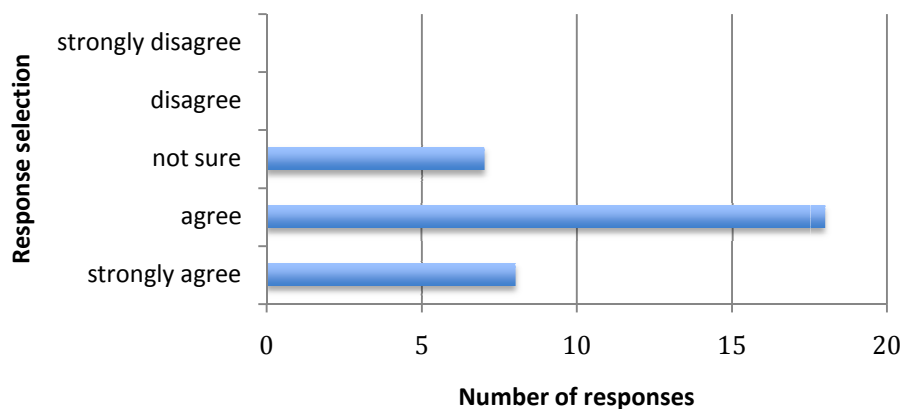
Figure 6: I use Metalib (or equivalent) more than once a week*



The next three questions were asked to see what participants thought with regards to emerging developments happening in the field of library electronic resources.

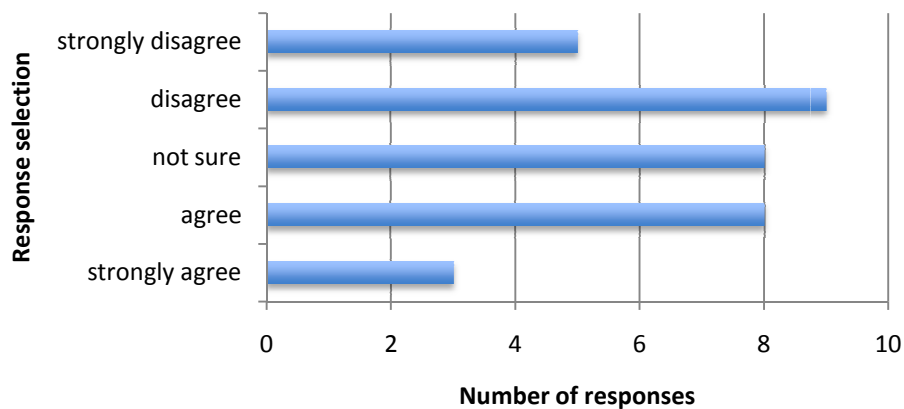
Participants mainly thought that to be alerted of new resources in their subject area would be a good thing. No participants disagreed with this principle, with eighteen participants' agreeing, eight strongly agreeing and seven being unsure.

Figure 7: I want to be alerted of new resources in my area



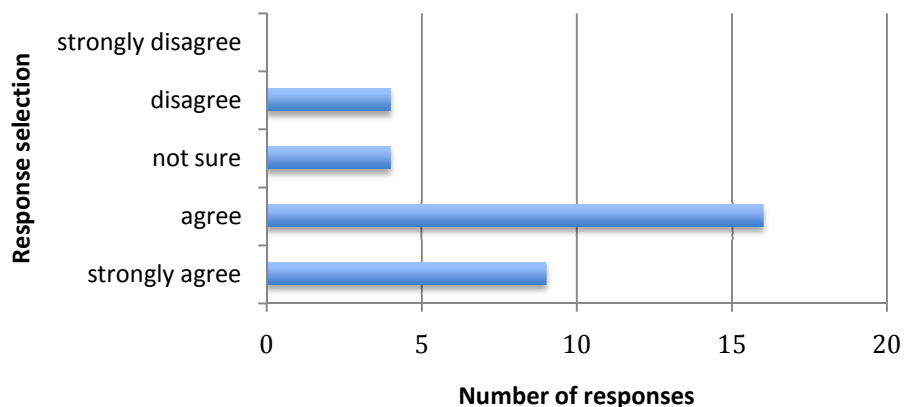
Most participants didn't want to do searches for literature on their mobile phones. There was an equal amount of participants who said they wanted to as there were who said they weren't sure. Many strongly disagreed, suggesting it was an issue they were passionately against. Interestingly, this is a feature that Serial Solutions, who developed Summon, have already put in place for mobile platforms including iOS, Android and Blackberry.

Figure 8: I want to do searches for literature on my mobile phone



Four people stated they do not usually search for items on reading lists with another four unsure if they do or not. The other participants, numbering twenty-five, all searched items from reading lists, with sixteen agreeing and nine strongly agreeing with the statement. These results show that the vast majority of participants, in their usual literature searches, are looking for reading list material. They will therefore not necessarily be typing random keywords into the search box, but be inputting book titles and journal article titles.

Figure 9: I usually search for items on a reading list*

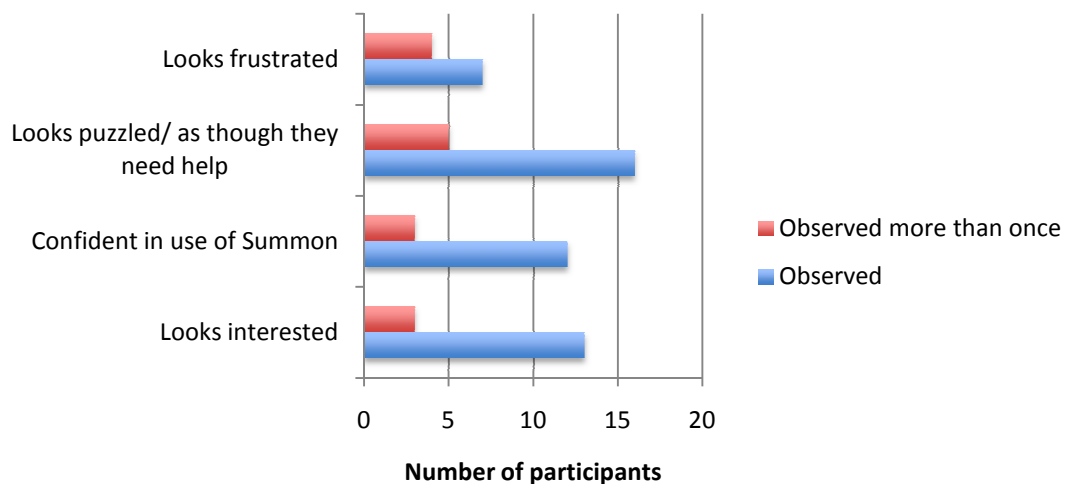


* - Indicates the charts that relate to participant's previous search behaviour. The findings appear to indicate that students have a need for a one-stop-shop and these results can therefore lead into a discussion about how this type of platform should be designed.

Observations

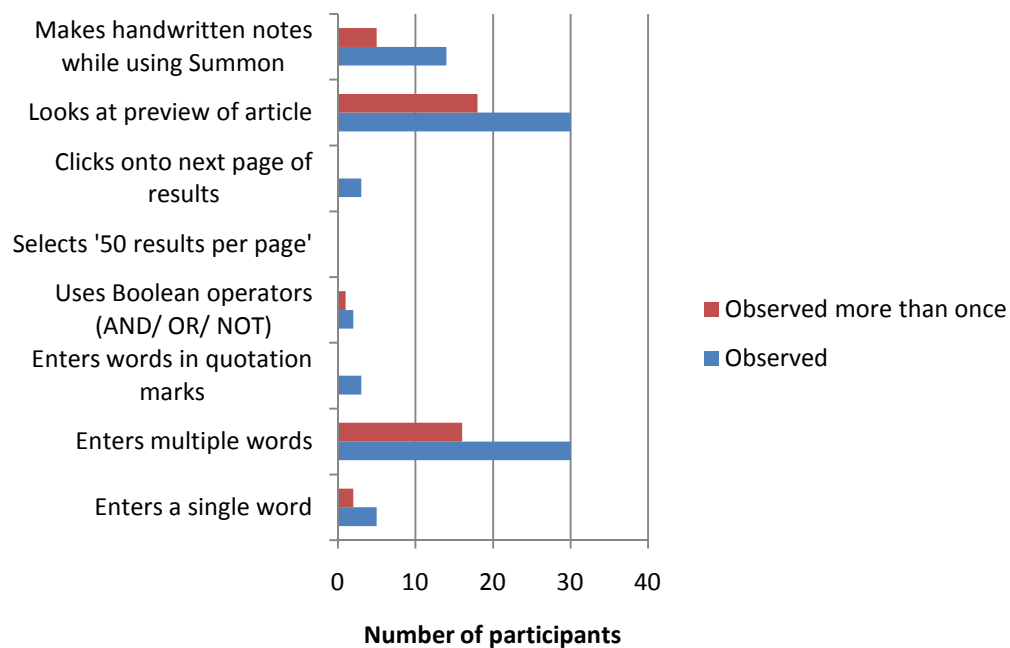
The Observational checklist that was provided to observers can be found in the Appendix. The results displayed in Figure 10 show that most people looked as if they needed help or some kind of assistance when using Summon. This was closely followed by thirteen participants who appeared to look interested and a similar number looked confident.

Figure 10: Observed General Behaviour



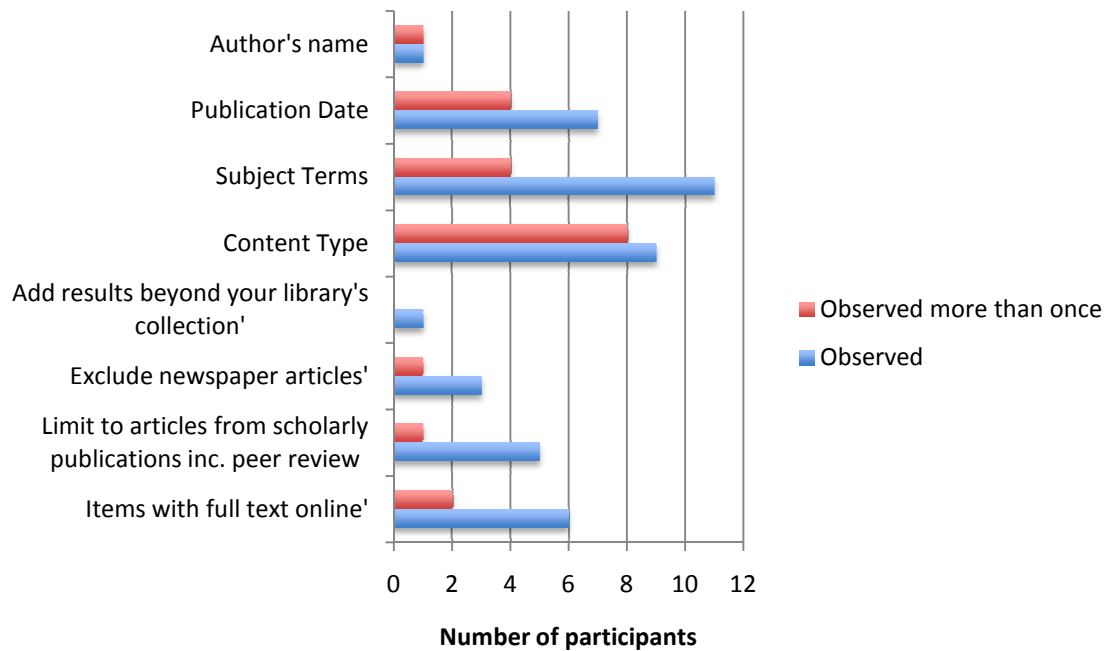
Participants' search techniques were also observed as the results in Figure 11 show. Thirty entered multiple words into the search box which corresponds with the initial questionnaire as the majority of students, before using Summon, said they did this. The same number of participants made use of Summon's preview feature. This allows the user to see more details with regards to a specific result, such as an abstract, before selecting the item. Nearly half of all participants made handwritten notes at least once, which suggests that students still require some non-electronic tools when researching. Little or none of the other search techniques were observed.

Figure 11: Observed Search Techniques



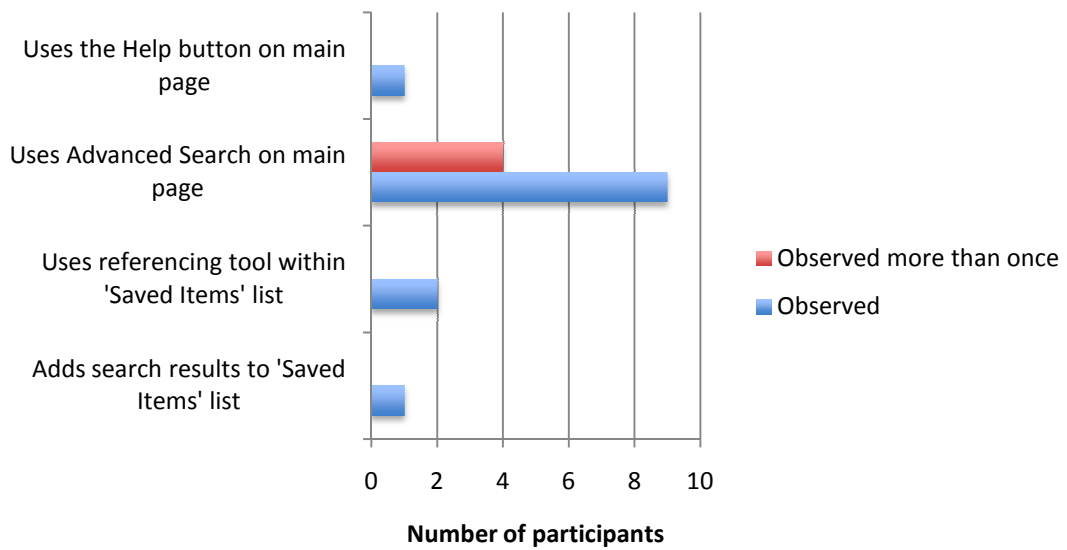
Summon enables the user to retrieve thousands of results simply by inputting keywords. These results can then be refined. Figure 12 shows how often these refining tools were used by participants however the chart shows that there was not one facet used overwhelmingly more than others. Figure 11 shows that all but three participants entered multiple words into the search box but less than half used the facets. This could mean that most students simply typed in keywords, searching the page of results, and repeated this exercise until they found some useful resources. Of those that did use the refining tools, the three most popular facets to refine one's results by was Content type, Subject terms and Publication date.

Figure 12: Observed use of 'Refines Search Results by...'



The majority of participants did not use the extra functions that Summon provides. Indeed, as Figure 13 shows, 'Advanced Search' was used the most but only by nine of the thirty-three participants. This could indicate users' lack of search skills or alternatively that Summon, in its basic form, provides everything they need in a one-stop-shop.

Figure 13: Observed use of Extra Functions



Group Discussions

This section will present the findings of the group discussions. Several themes emerged from the discussions which reflect the way the participants used Summon during the search task scenario. Due to the nature of the 'Post-search task questions', which can be found in the appendix, the themes will also reflect participants' previous experience with one-stop-shops or similar products. Quotes are attributed, where known, to the participant who made the comment.

Easy/ intuitive

"I felt like there was a lot you could do without needing any help." Richard

Every group commented on how easy Summon was to use, echoing Richard's comment. This indicates that ease of use is a primary factor when students evaluate websites or similar interfaces, in this case a one-stop-shop. They want to spend the majority of their time researching rather than figuring out how to use such products.

Anna found Summon to be very well designed, from a usability perspective, stating that people of all levels should be able to navigate their way around the one-stop-shop, indicating its intuitiveness.

“[Summon] was quite user-friendly to anybody who doesn’t really have a clue about computers.” **Anna**

There are numerous quotes from participants in this study stating simply that Summon is ‘easy’.

Participants were constantly comparing Summon with the University of Huddersfield’s previous product Metalib, stating how easy it was in comparison. More quotes can be found in the next section.

“I think if you were coming across both [Metalib and Summon] for the first time, you’d probably have more success straight away with Summon on your own.” **Maria**

Librarians, at the University of Huddersfield, find that Metalib does require considerable instruction for those using it for the first time. Indeed for students who use Metalib less frequently than others, they often need regular assistance also.

Quick

Following on from ease of use, many participants spoke of their delight at the speed at which Summon retrieves results.

“I think you get a lot more articles from Summon because (in Metalib) you’ve got to search within each different database and your research takes you a little bit longer.” **Caroline**

The time it takes from when you've typed in your search terms to reading through the results is exceptionally quick. Again, this is definitely something students seem to want if they were to adopt a one-stop-shop for their academic research. It is worth noting that Summon differs from Metalib as it indexes all of the articles on Serials Solutions own servers. Metalib, which is a federated search engine, has a different, longer process.

Comparison with single search box search engines

In response to the prompt question; 'Where would your normal starting point be for finding information for your academic work?' all groups had at least one participant mention that they use Metalib, Google and Google Scholar. The one thing these three platforms have in common is that they provide users with the option of searching via a single search box. Most participants would appear therefore to have experience of using a one-stop-shop-type product.

"I can find lots of useful information on Google and then go straight to the University website." **Unknown**

Taking into account the comments from the 'easy/ intuitive' section, it would seem that Summon is easier than the one-stop-shops participants have already experienced. This theme is highlighted by the selection of comments below.

Emma likes the simplicity of the single search box:

"There's just one [search box] to put [the keyword] in and it's a lot easier than Metalib to use anyway." **Emma**

An unknown participant also stated that:

“With Summon you could just put [keywords into the search box] and see what comes back and you could probably find something you could use without any instruction.” **Unknown**

It is clear that by having a single search box, students know that they need to put keywords into it to retrieve results; it is something that is fast becoming innate, particularly in a generation of students who begin using computers from an early age.

“You’ve not got as many fiddly bits to do; you just type in what you want. It’s almost like Google Scholar, so I like it for that.” **Nicole**

Nicole mentioned that she likes the similarities between Summon and Google Scholar, as did many other participants. This suggests that library users will feel more comfortable and at ease when using a product that is similar to a system like Google, a website they access frequently.

Participants liked that Summon makes online navigation of library resources so much easier. Emma describes how Summon, acting as a one-stop-shop, brings all the resources she uses into one place.

“You don’t have to get overloaded because at the moment I’ve got my bookmarks on the bar at the top (of my browser), I’ve got Metalib and the university catalogue and all that and it just reduces it down a bit because [with Summon] you can get it all in one place.” **Emma**

Another participant commented on this same issue of Metalib being ‘clunky’.

“It seemed almost like you had pages on your browser stacking up on top of each other whereas in [Summon] you tend to just get it all mostly on one page instead of looking through an individual article.” **Richard**

The main theme that had been evident throughout all of the group discussions was that, without prompting, students would continually compare Summon with Metalib, the previous system used at the University of Huddersfield. Whilst this is understandable, Metalib is likely to be the only one-stop-shop style product that most participants will have used, it also shows how students are very much aware of what systems they like and what they don't.

The participants that took part in this study were very impressed by Summon as a one-stop-shop search resource discovery tool. The selection of comments below demonstrate this.

"It's better than Metalib. In Metalib you have to search in different places but with Summon, you just enter one or two words and then you'll have books and articles." **Abdulrahman**

"Yeah I just really like it. I think it's a big improvement on Metalib because I just never got the hang of Metalib." **Emma**

"[Summon has] definitely got its advantages over Metalib". **Maria**

"[I] used Metalib before and I definitely think [Summon is] an improvement on that in terms of how much easier it is to search for things." **Richard**

"It's quite a clean layout, a lot clearer formatted than Metalib is." **Lauren**

Lots of results

Many participants commented on the number of results that Summon retrieved when they inputted keywords into the search box. Due to the design, Summon, like

Google, retrieves lots of results, even from multiple keywords, much to the frustration of some participants.

“I had 7,000 results that I couldn’t narrow down which I found quite annoying.” **Abbie**

Abbie mentioned that when she was searching for keywords in a specific subject area, Summon was retrieving results from areas she did not want.

Maariyah seemed to be aware that Summon acts as a one-stop-shop and retrieves information from a wide range of sources and articles she found would represent differing views on her area of interest.

“(I found) quite a lot of the mixed articles for and against whether it supported getting cancer and all that. There were a lot of mixed articles you could get so I think it covered a lot of information.” **Maariyah**

Participants in most groups mentioned that they experienced broken links on occasions. This was explained as teething problems early in the implementation process.

Quality of Results

Despite most groups commenting that Summon was easy to use, quick to retrieve results and provided lots of results, some participants questioned the relevancy and quality of some of their results.

“What’s coming up? Or is this really what I was looking for? [I] wasn’t particularly sure about how useful [results] were for what I was trying to find out about.” **Richard**

This participant stated that they retrieved

“some useful, some not so useful but that’s the way it is with everything; it’s the same with a Google search and Metalib search, any search. The more you refine it, the more relevant your results will be.” **Jo**

Both participants seemed to be aware of the difficulties with searching in general but knew that the refining features would have retrieved more accurate results. Both participants were also aware that difficulties can be due to the users’ methods and not just problems with the systems.

Need for instruction

Despite many participants finding Summon, intuitive and ‘easy’, as previously mentioned, there were others that preferred some of the features Metalib provided, including an A-Z list of all of the resources.

“I think [Summon is] difficult if you need a specific result about your information or a specific article, it’s difficult to find.” **Unknown**

This is true of Summon. Summon is designed as a search engine, a tool to help users search all of a library’s subscribed material at once. It is therefore designed to be able to retrieve information users might not normally come across. There is a function, and the participants were notified after the study, that enables the user to search for a particular journal in the advanced search option.

“I guess because I’ve used Metalib a few times, I was familiar with it but I’d had instruction when I’d first used Metalib so I think to make a tutorial session of [Summon] would be helpful – to know the basics of where to go.” **Abbie**

These comments were made specifically with regards to users having the ability to access directly to a resource of their choice. Students at Huddersfield were

particularly perplexed that this feature was missing from Summon. The perception gained from this research is that students of Huddersfield appeared primarily to use Metalib as a platform to access subscribed resources rather than as a one-stop-shop.

This concern was highlighted early on in the beta testing of Summon at Huddersfield and was dealt with by the library systems manager. Serial Solutions, the company that provide Summon, have allowed their customers a limited amount of customisability. Making use of this, Huddersfield has, on the Summon homepage, managed to provide links to the two A-Z lists that users want. One is for journals and the second is for other web resources including resources that aren't compatible with Summon.

This is extremely helpful information for librarians and those that will be introducing Summon to users. Despite the comments stating how 'easy' and 'intuitive' Summon is, we had a number of participants, particularly international students, who would benefit greatly from some instruction. As research has shown, the vast majority of users will undoubtedly be able to use Summon without any instruction. However, it is the librarian's role to teach users how to get the most from this search engine and how to use all of its features to maximise its potential when searching for information. The university of Huddersfield will definitely base their upcoming teaching material on some of these findings. The results provide us with a rich insight into the searching behaviour of a selection of students.

Despite the majority of participants stating that Summon was easy to use, other spoke of their initial confusion when using the one-stop-shop.

"[I] felt like I had to write in the issue number and the volume number and all of that. And I just thought it's a bit of a hassle." **Maariyah**

This highlights the fact that all users are unique so in some sense it is impossible to cater for every eventuality. Sometimes the user will have to ask for the initial assistance but continuing support won't be needed.

Use of additional features

From the focus group discussions, and with regards to this specific one-stop-shop, it was clear that most participants didn't make use of the advanced search option. This would suggest that the basic search provided by Summon retrieves results that meet the needs of the participants.

"I think what's available on the first screen is almost like an advanced search anyway because you can very quickly cut down what you're looking for, so I'm not sure I'd use advanced search much unless I had a specific target to start with really." **Richard**

The general response when students were asked if they made use of the additional features found on Summon was that they didn't, they just used basic search. A participant from the fourth focus group struggled with the 'include' and the 'exclude' list that are found when refining content type and subject terms.

"I managed to do it with a shorter list later but I was a bit confused with how to use it." **Richard**

Again, this suggests that if one-stop-shops provide additional features there needs to be some instruction.

Despite not being mentioned by many, Emma liked the facets.

"I used [the refining facets] to narrow it down because it gave me everything on my area and then I narrowed it down to history and mainly in English."
Emma

Richard added that the benefit of using the facets was that

“you could click on certain things and they’d cut down the number of results quite quickly.” **Richard**

The save feature was only mentioned by Emma. She liked the fact that, quickly, she could save articles or items that were of interest and then email the list to herself to go back to at a later date.

“I like the save bit on it as well because you don’t have to look at [the articles] straight away, you can have a quick flick through.” **Emma**

The article preview was a feature that gained a lot of praise from participants as they found it extremely useful and time saving for their research.

“It wasn’t as busy [as Metalib] and it’s good because you could get a preview of the abstract as well so you don’t have to go into it, you can just have a look at [the preview] and see if it’s useful or not. I think that was good.”
Rebecca

Richard felt that Summon was straightforward as others commented and commented that he liked the results.

“All down the left hand side is how you can reduce your search and also your results.” **Richard**

Difficulties experienced

Groups one, five and six were predominantly international students for whom English isn’t their first language. The group discussions in particular were difficult in

terms of the researcher not always able to understand exactly what the participants meant in the answers they gave.

Other difficulties were due to technical problems with individual PCs and the software not having been correctly installed, rather than a problem with Summon. Anna, Rebecca and Jo, from the fourth focus group all experienced problems accessing the full text of the journal article. Jo had been using Summon prior to this focus group and was aware of the problems.

“There is still little glitches with [Summon] because I’ve rung the librarian up and said “It says there should be full text for this and there isn’t” and they said “Oh yes it’s just teething problems”. **Jo**

Constraints of study

Many participants felt that if given more time during the observation, they would have explored Summon further and potentially made use of using its additional features. Indeed, although Rebecca from the third group noticed the refining facets on the left-hand side of the screen she thought that if she had longer than the allotted twenty minutes,

“I think I probably would [have used them] but I was just looking at something basic”. **Rebecca**

Synthesis

A synthesis of the findings allows us to draw several common themes that have emerged from the three parts that make up this study.

At the time of the study, all participants were students at the University of Huddersfield. Postgraduate taught students made up a slight majority in this sample group, a substantial number being Undergraduates and the remaining few Postgraduate researchers. There were representatives from all schools except Applied Sciences and the Business School provided the study with the most participants; seventeen.

The data gathered from the pre-search task questionnaire makes it clear that for this particular sample of students, a popular method used to search for academic material was to input one or two keywords into a search box. This would suggest, like some of the literature, that students would prefer to be able to use a similar system when searching for academic information.

During the observation, this type of search behaviour is exhibited in thirty out of the thirty-three participants. Furthermore, during the group discussions, many participants commented on the simplicity of the search box and how Summon, like Google Scholar, retrieves lots of relevant results simply by typing in some keywords.

Continuing the discussion of participants search behaviour, in response to the questionnaire, eighteen students said that they regularly used the advanced search function within a resource discovery tool. Looking at figure 13, however, this shows that only eight of the thirty-three participants actually made use of the function when they were observed. The question of whether participants used the advanced search function was also asked in the group discussions. One participant stated the reason he didn't use advanced search was because the main search box located on the Summon homepage was so powerful and seemed good enough in itself.

It was also worthwhile to obtain information regarding the frequency students make use of Summon-like systems. Twenty-five students said they used Metalib or equivalent more than once a week whereas the remaining participants didn't or weren't sure. It is expected that most participants would make use of these systems when required however the findings from the group discussions revealed that lack of use also came down to students not liking Metalib. This suggests that if students find a library system easier and more intuitive to use than previous systems, they are likely to use it more often. This could therefore lead to students conducting more academic research than they have done previously, leading to a better understanding of a subject area and consequently improved grades.

The findings would suggest that the participants would welcome the full implementation of Summon, at the University of Huddersfield, and therefore the prospect of a one-stop-shop. The questionnaire highlights that the students' existing search behaviour is suited to the user experience of a one-stop-shop and the evidence gathered from the observations and the group discussions makes it that the participants enjoyed the user experience that Summon provided.

It was clear from the observations and the feedback gained from the group discussion that the vast majority of participants found Summon very easy and intuitive to use.

In terms of participants' general behaviour when using Summon, less than half demonstrated a degree of interest and confidence when using the one-stop-shop. Figure 10 shows that initially, the majority of participants appeared puzzled or frustrated when using Summon. This could be due to it being a new system or that the majority of students didn't speak English as a first language. It could also be due to Summon being unintuitive and difficult to use, although the qualitative data gathered in the group discussions would contradict this notion.

Most participants compared Summon with Metalib, the previous system at the University of Huddersfield, which could explain any initial hesitation that they might

have felt towards it. The observations don't really convey whether a participant seemed able to use Summon or not. What they do show is the techniques used which were primarily entering words into the search box, looking at a preview of an article and writing handwritten notes. The fact that participants were observed typing keywords into a search box corresponds with how participants said they searched in the questionnaire.

Figure 11 makes it clear that the search box was the most used feature of Summon, jointly with the preview of article feature. Indeed, this was confirmed in the group discussion as participants commented on how easy Summon was to use primarily because of the search box. Not many other features were observed during the search task. This suggests that these particular students' search skills were of a certain level meaning they don't make use of such features as Boolean operators despite Summon providing it. The fact that Summon provides these additional features alongside the basic search box, however, means that more advanced students are able to search in a more traditional way thus catering for differing standards of students.

As the observations and group discussion testify, on the whole, participants in this study did not use the additional features provided by Summon, including the refining facets. This suggests it is an area where students need support and at an appropriate point in their course, they would probably benefit from receiving some training. It could also suggest that the refining features found on Summon, and other one-stop-shops, need to be regularly pointed out to users, perhaps in the form of reminders or alerts that pop-up on screen.

A minority, generally international students, did struggle with Summon, however, this is to be expected due to the language barrier. The University of Huddersfield, like many institutions, has a lot of international students.

There were some minor problems with individual PCs yet, the students were aware of this and could still see that Summon was a great improvement for their student experience.

In summary, the general consensus that has been gathered from the focus groups is that participants like Summon as they found it easy to use and effective in enabling them to search across the libraries' subscribed resources. From advanced users there was slight reservation with regards to how one would conduct tasks akin to a systematic review using Summon. Some of the literature suggests that the one-stop-shop approach to searching library resources produces a worse learning experience for the student than traditional methods, however this will be addressed further in the discussion. In conclusion and on this evidence, the findings suggest that Summon, as a one-stop-shop, is a vast improvement when compared to Metalib, the previous system at the University of Huddersfield.

Discussion

This chapter will present a discussion of the major findings from the dissertation research and compare with previous research as reported in the literature review. It will be written with specific reference to the objectives and to that end, the objectives are reiterated below:

1. To determine, through a more thorough search of the literature, what the general consensus of opinion with regards to the use of one-stop-shops within academic libraries.
2. To examine the existing search behaviours of students at the University of Huddersfield. (Questionnaire and group discussion phase)
3. To observe how students use Summon. (Observation and group discussion phase)
4. To explore participants initial responses to using Summon as a (potential) design of a one-stop-shop. (Observation and group discussion)
5. These objectives will achieved by conducting focus groups that will include three elements:
 - Questionnaires collecting demographic information and data with regards to participants' pre-focus group search behaviour.
 - Observations (usability test) to allow participants to use Summon in a naturalistic situation.
 - Group discussions for participants to feedback on their experience of using Summon.

The discussion will attempt to take a thematic approach based on the objectives and key findings in relation to those objectives. Themes were drawn out of the findings and will be interleaved throughout the discussion with the evidence from the literature. The final section will seek to answer the research questions and it will also seek to make some recommendations/ contributions for the future of one-stop-shops in general.

1. Are current one-stop-shops of sufficient quality for students to adopt them as their chosen method of academic research?
2. Are one-stop-shops the type of system that is appropriate to meet the needs of students for their overall university experience?

**Existing search behaviours of students at the University of Huddersfield.
(Questionnaire and group discussion phase)**

The findings from the questionnaire showed that the most popular method students used, before they took part in this study, to search for academic information was by inputting one or two keywords into search engines. This type of search behaviour from students has been recorded by previous studies. Tallent (2004: 70) points that having a keyword based method “is not just the approach (students have) to this resource, but to database searching in general.” The evidence from what participants said before this study and from other studies, clearly shows that students appear to be transferring their search behaviour from web search engines, thus companies are developing appropriate academic equivalents to cater for their search behaviour.

Before participants were observed using Summon for the first time, eighteen of out of thirty-three said they regularly made use of the advanced search function within search engines. A limitation of this study is that the findings from each phase of the study weren’t linked together with the respective individuals meaning the opportunity to draw other relevant correlations, such as matching use of feature

with their level of study, was missed. Without analyzing the findings again, it can't be known which students, before the study, said they usually make use of the advanced option when searching for academic information. We do know that the majority of participants were studying at MSc level, so it is to be expected that they have a reasonable experience of academic searching having already completed an undergraduate qualification. The literature (Oberhelman, 2006) too confirms that students of this level should be more 'savvy' when conducting their research and therefore making use of additional features such as advanced search.

Results from the questionnaire data and group discussion transcripts show that when students were asked about their existing search behaviours for academic information, the majority stated that they use a type of search engine regularly. Be it a library catalogue, web site, federated search engine or web search engine, only eight participants said they didn't use Metalib or an equivalent more than once a week. The nature of the question, which in hindsight was poorly phrased, means those that were unsure or disagreed with the question, may have used Metalib once a week, however, there wasn't the opportunity for them to respond as this wasn't an option that was included. Alongside the many quotes recorded during the group discussion, participants made statements such as "they can find lots of useful information on Google", suggesting their awareness and probable regular use of such systems.

The findings from the questionnaire also showed that the vast majority of participants, numbering twenty-five, all searched for items that could be found on a reading list. As has been documented in the findings commentary, this type of data would suggest that these particular students, when looking for academic information, are inputting book and journal article titles rather than random keywords. So in one sense, this evidence seems to not correlate with much of the literature (Oberhelman, 2006) that has been consulted for this study. What this initial data doesn't tell us is if students were successful in searching for reading list material their using this method. One would presume, however, that they were otherwise they wouldn't continue to use library systems in this way.

One of the main themes throughout the findings of this study was that all students would compare Summon with Metalib or a similar product again highlighting their experience of using one-stop-shops or search engine systems. The qualitative data gathered from the group discussions, although only a snapshot, acts as evidence that one-stop-shop style products are what students would like from their academic experience.

This small study has shown that most students are familiar, and one would assume therefore confident, with using Google-like systems to conduct academic research. The literature supports this evidence as well with studies such as Tallent's (2004) usability study conducted in Boston that found that students were familiar with and therefore desired a search engine-style interface for their academic studies. This research and supporting evidence from the literature would suggest that students want a one-stop-shop like Summon to be able to easily navigate library collections.

To observe how students use Summon. (Observation phase informed by comments made during the group discussion)

As documented in the questionnaire, conducted before the search task, twenty-one participants said that when they searched for academic information using an information retrieval system, they inputted one or two keywords into a search box. The findings from this study showed that thirty out of the thirty-three participants were observed exhibiting these same search behaviours. All of this evidence, plus the recorded comments made by students in the group, corresponds with much of the literature (citation) and studies that have already been conducted. This would suggest that libraries should be providing what students, as Oberhelman (2006: 6) puts it, "have long wished for", namely "a clean, Google-like box into which they can plug a keyword or two for a search and... instantly get the results they want."

From the observations recorded during the search task, the preview of article function was the joint most used feature when participants spent twenty minutes

using Summon. Thirty out of the thirty-three participants made use of this feature, which suggests they found it a very useful tool for their research. The results page displays fifty of the retrieved results ranked in terms of relevancy and in a list form. Each entry provides minimal information such as title, author and item type. Participants have the option, with the mouse cursor, to hover over the title of a particular result, which would display extra details about the item, namely the abstract, if an article, or blurb if a book. It is clear that apart from the essential component of a one-stop-shop, namely it's intuitiveness and relevant results; companies developing such systems need to provide features such as the article preview to add-value. The literature (Stubbings, 2003; Oberhelman, 2006; Korah & Cassidy, 2010) is littered with examples of students being frustrated with poor one-stop-shop products or ones that have been poorly implemented.

The data collected from the observations and the group discussion make it clear that, generally, participants did not make use of the refining facets that are located on the left-hand side of the screen. These are numerous tick boxes where users have the capacity to narrow their results down further. This allows the user to reduce the amount of results they have to sort through and by including or excluding subject terms; for example, the results will become more relevant. There are a number of reasons why participants behaved in this way. Firstly, much of the literature (Oberhelman, 2006), as we have seen, describes students' search behaviour as impatient, and that they are unwilling to spend a lot of time analyzing the initial list of retrieved results. In the case of this study, it meant that participants didn't fully explore Summon and take the time to try out some of the additional features. Secondly, because there was only twenty minutes allotted to use Summon for this study, it would seem that a lack of time was a factor that influenced whether participants used the additional features or not. Interestingly, Google, the much quoted search engine of choice, added refining facets onto their results page in 2009, so it may be that as students become more accustomed with facets in their general web searches, they are more likely to use such features on Summon when conducting academic research. If this is to be the case, then one-stop-shops such as Summon, that have additional features, may end up being the search engine of

choice for students, as they 'do' the basic search very well but also provide more options for the more advanced user.

It is worth noting that when conducting the search tasks (observation element), there were intermittent problems with certain PCs. This would often involve a problem with a PDF reader or browser Plug-in. The researcher was aware of these problems and dealt with them accordingly. Participants who encountered such problems were told to do the best they could under the circumstances or, where possible, make use of a PC that was already logged on, so they didn't lose much time. The researcher is aware that these problems could well have had a negative effect on the participants' first impressions of Summon.

To explore participants initial responses to using Summon. (Group discussion)

After the participants spent twenty minutes using Summon and then a further twenty minutes or so discussing their thoughts on it, the general consensus was that they were very impressed with what they saw.

The overwhelming response from participants to using Summon for the first time was that it was easy and intuitive, especially when compared with Metalib, the University of Huddersfield's previous federated search engine. The other themes that emerged from the group discussion include that the participants found Summon quick to retrieve results, throughout the discussion they compared it with Metalib, they commented on the fact that they received lots of results, the quality of those results, the issue of requiring instruction, the use of additional features, any difficulties that were experienced and the constraints of the study.

Much of the literature (Morrison, 2005) that supports the idea of creating a one-stop-shop for students, to best navigate themselves through the bewildering amount of subscribed resources, argues that the implementation of the product is a key component in the success of a product and how well received it is by library users. He documents how products generally regarded by lecturers and librarians

alike as good systems and appear to satisfy the need of the students, are still not used by students. Instead they turn to Google. This is invariably because of the amount of resources, or lack of, that the institution is able to put behind the launching and promotion of the product. The evidence suggest that despite Summon appearing not to require large amounts of instruction, at least to use it at a basic level, it still doesn't have anywhere near the same amount of brand presence that Google has for example. This will mean that although in the first instance Summon will not need much instruction to be delivered, for it to be used by students regularly throughout their course, it still needs to be heavily promoted by librarians and lecturers. If this is not the case, the likelihood is that, as has been aforementioned, students will not be aware of the one-stop-shop and inevitably default back to Google.

Based on the observational data collected showing the features, of Summon, that participants made use of and the comments made in the group discussion, it was clear they thought Summon to be a vast improvement on Metalib, the previous one-stop-shop at the University of Huddersfield. It was clear that because of their positive response to using Summon, those participants who were continuing their studies next year were very much looking forward to making use of the new search engine.

Are current one-stop-shops of sufficient quality for students to adopt them as their chosen method of academic research?

The answer is probably that 'it depends on...' a number of factors. This study has in one sense been a usability study, conducting focus groups in an attempt to find out what students at the University of Huddersfield think about a proposed new one-stop-shop. As has been documented by the literature and through the findings, it would seem that, certainly with regards to this particular system, students are impressed by Summon and that with a bit of fine tuning to the customizable features and a small amount of instruction, it will provide a very useful tool for when they conduct academic research for their studies.

There is no doubt that Summon excelled in many areas as shown by the findings. The ease and intuitive nature of the product was expressed by many, the fact that it was a single search box, the speed at which it retrieved results, the amount of results. All participants from this study were in agreement that these are features they would like in a one-stop-shop. This response from students mirrors that from the literature. Indeed many librarians and lecturers can see that Summon or an equivalent is a system exactly what library users should be provided with due to the complex nature of navigating their way around electronic library collections.

Are one-stop-shops the type of system that is appropriate to meet the needs of students for their academic experience?

We establish then (through literature and findings, responses in questionnaire, discussions, and observations of their competency when using such platforms) that the concept of a one-stop-shop isn't new to students; in fact it would appear to be something they have come to expect when finding information for their academic work.

Criticism of one-stop-shops has come from some quarters that believe this type of system is not the 'best' way to encourage students to search for resources because it encourages brainlessness and discourages users from developing a search strategy. Others however, would stress that Summon has been created in the way it has because students aren't meeting that ideal that librarians' seem to so desperately want. Users are demanding Google-like search engines, whether we like it or not. We can either continue to struggle on, educating our users how to use various databases correctly or we can embrace Summon-like library search engines which will enable and good quality resources to always be used, certainly dramatically more than before such one-stop-shops.

Within the literature, those against the idea of a one-stop-shop seem to have underlying philosophical reasons for this objection. From Oberhelman's (2006: 8)

experience, the single, unified search interface can never replicate library users having to deal with “matters such as subject categories and formulate appropriate search strategies to get relevant results.” The researcher agrees with this notion, indeed, one could see from the comments made in the group discussions that there were some participants who did want to delve deeper and make use of the additional features that Summon provides. The results show that apart from the search box and preview of article, few of the additional features Summon provides, were used. Is this because Summon does not provide library users with the right kind of tools, or are the Are advanced features less obvious than they can or should be? It is clear from the findings and using Summon oneself, that it can complete these advanced tasks and that the interface encourages it, however it may be that library users, undergraduates in particular, search in the only way they know how, via the search box.

It is therefore apparent that despite the quality and intuitiveness of Summon, library users will still require information literacy training in order for them to understand how to unlock knowledge properly and pare down their results. These, Oberheleman (2006: 8) argues, will always be “essential components of research” that a machine can never do on our behalf.

Summary

The main purpose of this study was simply to see if students liked Summon, a new one-stop-shop from Serial Solutions, that is being implemented at the University of Huddersfield. It was also to compare the findings of this study with the current literature that has been published about this developing area of interest. It is clear that the findings from this study correspond with much of the literature that suggests that students would like a good quality one-stop-shop to use for their academic research. This dissertation has taken into account that there are further philosophical questions that need to be addressed further, particularly surrounding the notion of whether one-stop-shops are indeed the type of system that students should be using for their academic research.

It is hoped that this piece of research can contribute to the other studies and literature and add to the ongoing discussion surrounding one-stop-shops.

The main point drawn out of this study are summarized below:

- The sample of students that used Summon in this study thought it was an excellent tool. They found it to be intuitive; fast at retrieving results and also that it provided lots of results.
- The participants felt they needed some instruction when making use of the additional features such as the refining facets.
- It was suggested that more advanced users would require specific instruction as well, to best make use of the additional features.
- Summon could be seen as a benchmark for one-stop-shops as this study suggests it achieves much of what federated search engines are lacking.

Conclusion

This chapter will relate the results to the objectives, consider the implications for practice, reflect on the effectiveness of the methods used and discuss the scope for future work.

There wasn't necessarily a general consensus in the literature with regards to the notion of using one-stop-shops in academic libraries, however what was in agreement is that students behaviour when using academic search engines tends to mirror that of when they use web search engines. (Oberhelman, 2006)

The second objective was achieved but at a basic level. Participants were asked via the questionnaire what types of behaviour they usually display when conducting academic research. The main findings were that most participants said they inputted keywords when searching for information.

The observation data corresponded with the findings from the questionnaire as participants were observed using Summon in generally the same way as they said they used search engines. This suggests that the way Summon is designed is arguably going to encourage more students to make use of the library search engine rather than a commercial alternative.

Objective four was achieved due to the lengthy process of conducting six group discussions and transcribing the subsequent recorded audio of the sessions. The transcriptions provided invaluable qualitative data including participants' general opinions regarding Summon but they also provided more specific details that couldn't necessarily be recorded in any other way.

Research methods

The research methods used in this study achieved the desired objectives, which was to find out if students want a one-stop-shop for their academic research. The literature review successfully looked at the differing opinions regarding the concept

of one-stop-shops in academic libraries but more importantly, was able to gain inspiration from similar studies and factor that into this research.

When writing up the findings, it was clear the questionnaire had some fault in its design. If the questionnaire was planned more carefully, the results for this particular research objective would have been richer and more able to feed into the discussion. There wasn't enough questions with regards to one-stop-shops, indeed two questions weren't appropriate (figure 7 and 8) as they were not related specifically to one-stop-shops. Including these questions, however, had no known negative bearing on the findings.

The major problem when observing participants using Summon was that it was so resource intensive. If an observer had more than two participants to observe, the quality of information recorded was poor. This only happened once during the first focus group, as there was a misunderstanding between myself and a colleague who had arranged for a class of students to participate in this study. The data gathered from focus group 1 therefore, will not be of as high quality as the other focus groups.

A major limitation of this study is that the findings are merely a snapshot of students' opinions of one-stop-shops and with specific reference to using a beta version of Summon at the University of Huddersfield. This must be taken into consideration when seeking to generalise the findings further afield. A reason why the students may have liked Summon so much is that the majority of participants were a fairly even mix of undergraduate and taught postgraduate and therefore perhaps not used to conducting research at an advanced level. This could also explain why the additional features provided by Summon were not used enough for participants to generate a meaningful opinion of them.

Summary of study

This study provides one of the most recent empirical insights into whether or not; British students want a one-stop-shop for their academic research. It brings together data concerning their existing search behaviour and compares it with how they actually used Summon. This provides a valuable snapshot into the ways in which current students approach academic searching. The discussion section of this dissertation touched on the further debates surrounding whether or not a one-stop-shop is appropriate for a university standard of learning, however expansion on this research area should be conducted further.

The findings from this research suggest that, on the basis of students spending time using Summon, a cutting-edge product, from looking at the data, questionnaire, observations and group discussions, and from looking at the recent literature in this field, it would appear that one-stop-shops, as a way of navigating academic libraries collections, are here to stay. It is clear the products are improving all the time and it seems apparent from the literature and the findings that this type of search engine is, certainly what undergraduates want.

Future research

Future work could approach the topic of one-stop-shops in academic libraries from the perspective of information literacy. Specifically, research could seek to address the emerging problem of how, in light of better quality one-stop-shops, such as Summon, do librarians continue to stress to users the importance of developing their information skills, as defined by SCONUL? Despite the ease at which one-stop-shops can find peer-reviewed journal articles, there is still the need to educate library users, to encourage them to engage with research and not merely accept the first result that is retrieved for them.

Total: 14,415 words (excluding abstract, references and appendices)

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Appendix

Appendix 1

Information Sheet

1. Research Project Title -

Is the one-stop shop approach to resource discovery what library users want? A case study evaluating the beta version of 'Summon', a "next generation" resource discovery product from Serial Solutions, recently been purchased by the University of Huddersfield.

2. Invitation paragraph -

You are being invited to take part in a research project. Before you decide whether you want to take part it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Thank you for reading this.

3. What is the purpose of the project? -

The aim of this research is to find out to what extent Summon meets the information needs of users at the University of Huddersfield. This will be done by conducting focus groups.

The focus groups will be designed to find out what library users like and dislike about Summon. This will involve observing participants as they use the product in a search task and obtaining feedback on their experience through group discussion.

The feedback received from the focus groups which will be collected via a demographic questionnaire, observations from a structured task and the group discussion. This will then be collated and analysed, with the findings presented in the dissertation. The results may be compared with the findings from a similar study taking place at the University of Northumbria.

4. Why have I been chosen? -

You have been chosen because you fit into the sample group of participants that fall into the category of undergraduate or postgraduate student at the University of Huddersfield. You could also have indicated to us through the online survey that you would like to participate in further research regarding Summon.

5. Do I have to take part? -

Taking part in this research is entirely voluntary. If you do decide to take part, you will be given this information sheet to keep (and be asked to sign a consent form) and you may still withdraw at any time and you don't have to have a reason.

6. What will happen to me if I take part? -

The intention is to conduct some focus groups where you will, in a group discuss your experience of Summon. We also would like you to complete a search task, lasting no longer than an hour.

We expect you, the participant, to approach the research project seriously as if you were conducting an assignment yourself. This will help us in our project.

The research method is qualitative as we are using focus groups, questionnaires, and behaviour observation of the search scenario.

7. What do I have to do? -

You would be expected to attend one focus group that would last approximately one and a half hours between the hours of 12pm and 2pm.

8. What are the possible disadvantages and risks of taking part?

The only disadvantage is that to take part in this study you will have to sacrifice some of your time; however we will provide lunch for all participants and are extremely grateful to all those that do decide to offer their time.

9. What are the possible benefits of taking part? -

It is hoped that through taking part in this study you will enjoy being involved in a project that intends to benefit all users of the library. You will also gain an insight into the challenges libraries face when seeking to buy a resource discovery product that meets the needs of many different users.

10. What happens if the research study stops earlier than expected? -

If the research study stops earlier than expected, this will be explained to the participant(s).

11. What if something goes wrong? -

If something goes wrong you should contact Martin Philip and/ or Andrew Cox (a.m.cox@sheffield.ac.uk) should you wish to make a complaint. Should you feel your complaint has not been handled to your satisfaction you can contact the University of Sheffield's 'Registrar and Secretary'.

12. Will my taking part in this project be kept confidential? -

All the information that we collect about you during the course of the research will be kept strictly confidential. You will not be able to be identified in any reports or publications.

13. What type of information will be sought from me and why is the collection of this information relevant for achieving the research project's objectives?

We will want to record your views from the focus groups and questionnaires but also observe your behaviour and note down any patterns that are evident when you're using Summon in the search task. This will help us feed back into the proper launch of Summon and make changes where necessary. It could also be beneficial for all those who design search engines.

14. What will happen to the results of the research project?

The results of the project will be included in my dissertation which is for the University of Sheffield and also in a report by the University of Huddersfield. In both instances, you will not be identified and you can obtain the results if you wish.

15. Who is organising and funding the research?

I am doing this research as part of my MA Librarianship at the University of Sheffield. I am working with my employer, University of Huddersfield, who have recently purchased Summon, to conduct further research in this area.

16. Who has ethically reviewed the project?

This project has been ethically approved via the University of Sheffield's Information Studies department's ethics review procedure. The University of Sheffield's Research Ethics Committee monitors the application and delivery of the University's Ethics Review Procedure across the University.

17. Contact for further information

For further information, you can contact me at lip08mtp@sheffield.ac.uk.

18. Will I be recorded, and how will the recorded media be used?

We wish to record the audio of the focus groups. This will be used only for analysis and potentially for illustration in conference presentations and lectures. The audio recordings of your activities made during this research will not be used for anything else without your written permission, and no one outside the project will be allowed access to the original recordings.

Thank you for taking part in the project.

Appendix 2

Initial Questionnaire for Summon Focus Groups

Name _____ Gender _____ Email address _____

Level of study (please circle) UG PG Taught PG Research

Year of study (please circle) 1 2 3 4 5
6+

School (Please circle) Applied Sciences
Art, Design & Architecture
Business
Computing & Engineering
Education and Professional Development
Human & Health Sciences
Music, Humanities and Media

Please circle your answer:

When I search for information for my projects I type one or two words into the search box

Strongly agree Agree Not sure Disagree Strongly disagree

I use advanced search

Strongly agree Agree Not sure Disagree Strongly disagree

I use Metalib (or equivalent) more than once a week

Strongly agree Agree Not sure Disagree Strongly disagree

I want to be alerted of new resources in my area

Strongly agree Agree Not sure Disagree Strongly disagree

I want to do searches for literature on my mobile phone

Strongly agree Agree Not sure Disagree Strongly disagree

I usually search for items on a reading list

Strongly agree Agree Not sure Disagree Strongly disagree

Informed consent

By completing and returning this questionnaire I consent to participate in this study.

Appendix 3 - Name of participant _____

General Behaviour:	Check if observed	Observed more than once
Looks interested		
Confident in use of Summon		
Looks puzzled / as though they need help		
Looks frustrated		
Search Techniques:		
Enters a single word		
Enters multiple words		
Enters words in quotation marks		
Uses Boolean operators (AND/OR/NOT)		
Selects '50 results per page'		
Clicks onto next page of results		
Looks at preview of article		
Makes handwritten notes while using Summon		
Refines Search Results by...		
'Items with full text online'		
'Limit to articles from scholarly publications inc. peer-review'		
'Exclude newspaper articles'		
'Add results beyond your library's collection'		
Content Type		
Subject Terms		
Publication Date		
Author's name		
Extra Functions:		
Adds search results to 'Saved Items' list		
Uses referencing tool within 'Saved Items' list		
Uses Advanced Search on main page		
Uses the Help button on main page		

Additional notes / further observations/ details of how participant was successful in their search:

.....

Appendix 4

Structured Search Task

For approximately 20 minutes, we'd like you to use the new Summon service as if you were just starting to look around for information on the subject:

- Either use your current research interests.
- Or, use one of our examples that fits your subject area.

While you're doing this Library staff will be observing what you do and making notes.

Applied Sciences

1. Discuss the advantages and disadvantages of the use of wind power as a source of renewable energy.
2. The 2012 Summer Olympic Games will take place in London. Discuss the potential impact this may have on tourism in the city.

Art, Design & Architecture

1. Discuss the importance of sustainability in the design and construction of residential buildings.
2. Discuss the ethical implications of 'fast fashion'.

Business

1. Compare and contrast business and consumer marketing. Illustrate your answer with appropriate examples.
2. State why an off the shelf software solution may be better for a small company than a tailor made system. Are there any disadvantages to using off the shelf packages?

Computing & Engineering

1. To what extent has the growth of touch screen devices impacted the development of handwriting recognition technology?
2. "Sustainability" is essentially the consideration of environmental issues and the effective and efficient use of resources. Adopt a whole life approach (conception, design, manufacture, operation and disposal) to analysis of the product, system or service chosen.

Education and Professional Development

1. Discuss the benefits of "detached youth work".

2. How effective are mobile devices at supporting learning?

Human & Health Sciences

Clinical scenarios

1. Karen is 48 and is currently taking Hormone Replacement Therapy drugs. However, following articles in a popular newspaper she is currently worried about an increased risk between taking HRT and cancer. Find articles which either support or negate her worries.
2. Write a report on how you would deal with a homeless male with diabetic foot ulcers and signs of neuropathy.

Music, Humanities and Media

1. How much of a discontinuity in the developments of the sixteenth century is represented by the 'mid-Tudor crisis'?
2. In what ways may the media be seen as 'powerful' in setting the agenda for social and political debate?

Appendix 5

Summon Focus Groups - Post Search Task Questions for Group Discussions

(Inspired by Dartmouth Summon Outreach and Huddersfield Summon survey questions)

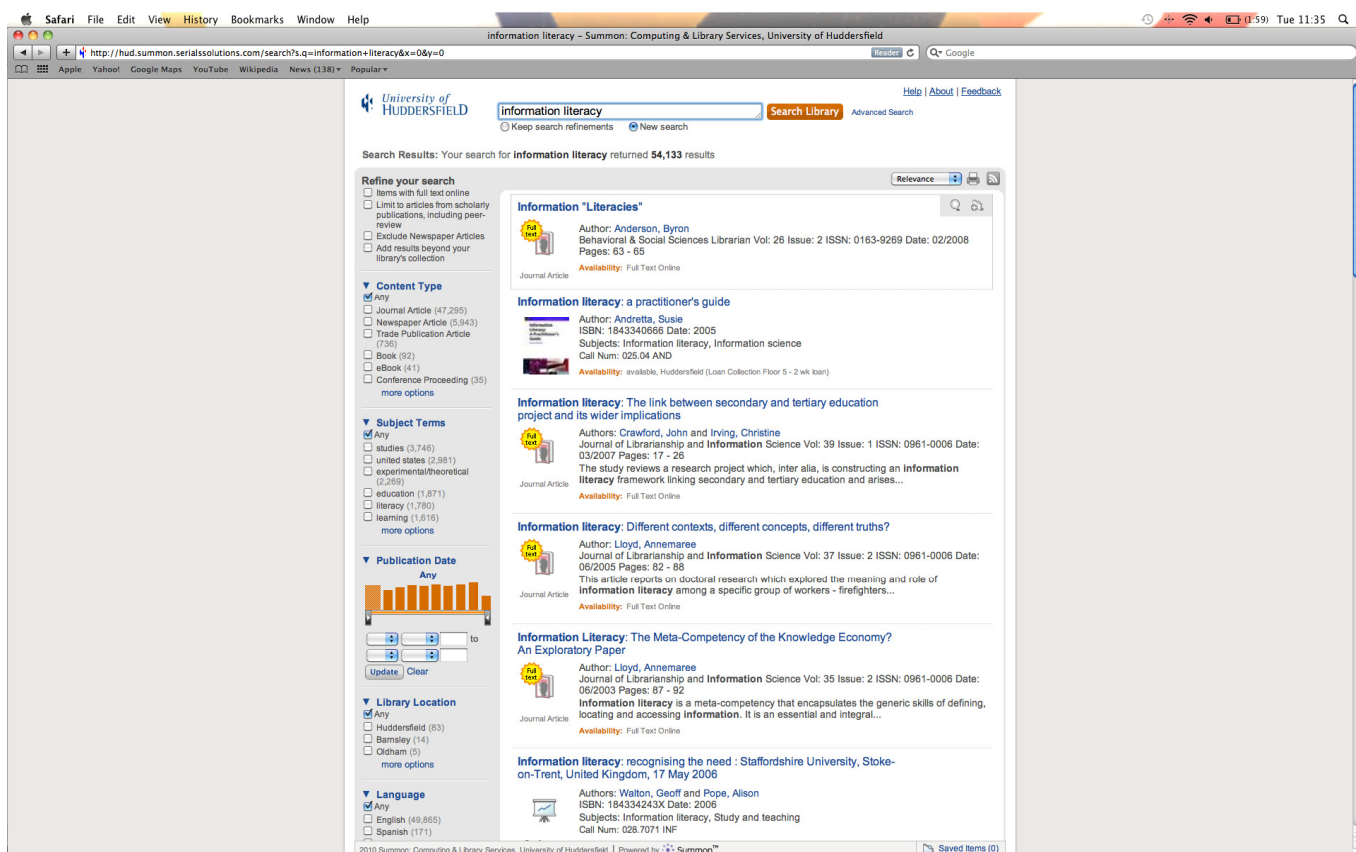
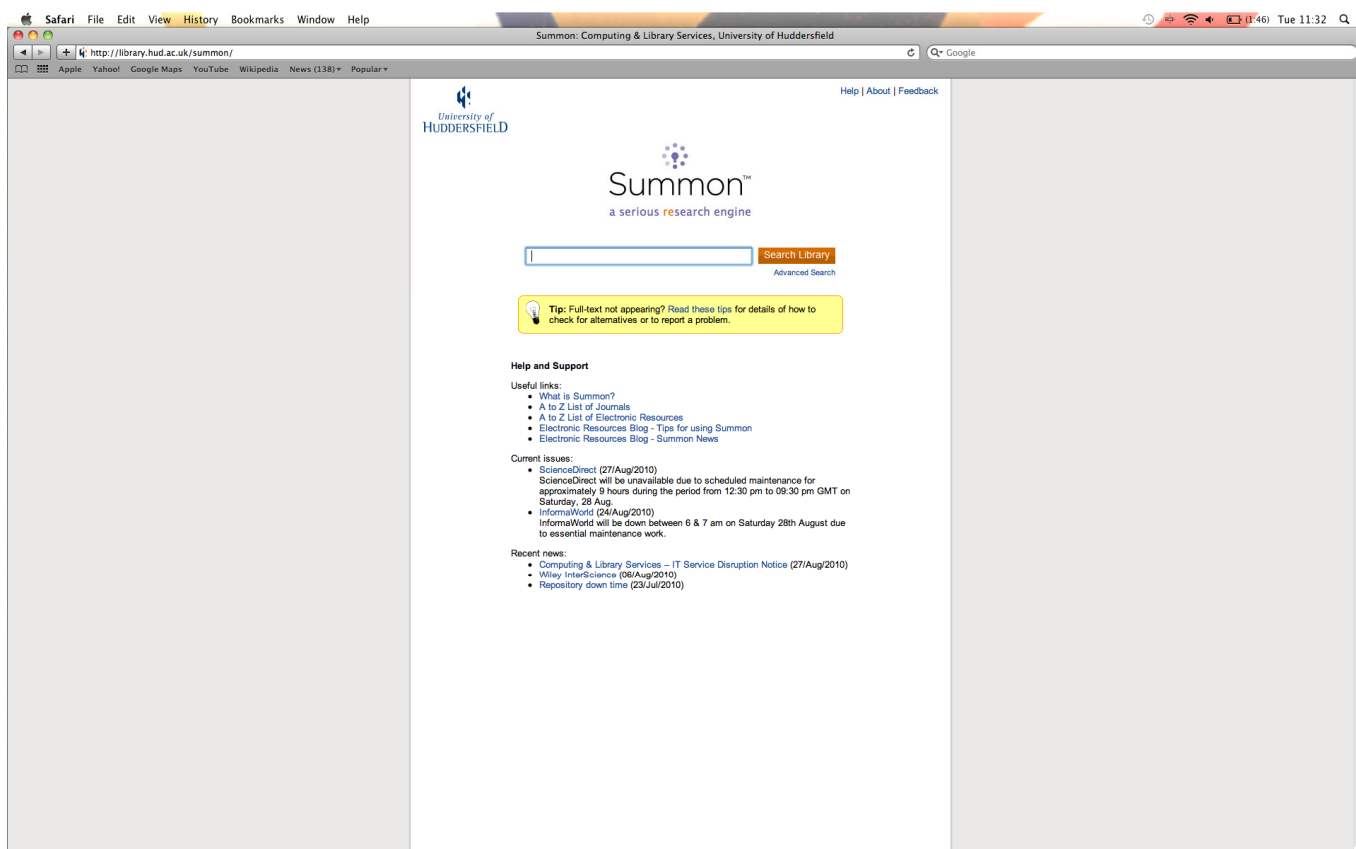
Group discussions ideally split into undergraduate and postgraduates if there are enough participants and would last approximately 30 minutes. There will be a facilitator asking the questions and ideally 2 observers taking notes plus a Dictaphone recording proceedings.

- 1. What do you think of Summon?**
[prompt – what’s Summon like? What’s Summon for? What’s in Summon?]
- 2. Did anything puzzle you or make no sense when using Summon?**
- 3. Did you feel you needed help to use Summon?**
- 4. Did you refine your search?**
[prompt – why?]
- 5. What do you think of the layout of Summon?**
- 6. Did you feel your results were relevant to your research topic?**
- 7. Did you use Advanced Search? How did you find it?**
[prompt]
- 8. What did you like BEST about Summon?**
- 9. What did you like LEAST about Summon?**
- 10. Where would your normal starting point for finding information for your academic work?**
- 11. How did Summon compare to that?**
[prompt – Did Summon make finding information easier? Is ‘easier’ different to ‘better’?]
- 12. Will Summon improve your learning?**
[prompt – how? It may be good but does it solve your study problems?]
- 13. How often would you use Summon? (e.g. once a semester; every day; every time I do an essay)**

14. Would you recommend Summon to a friend or colleague?

15. Any other comments?

Appendix 6 – Summon screenshots



Appendix 7 – Metalib screenshots

