An investigation into the interactive teaching practices of librarians in Information Literacy instruction at the University of Auckland Library

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For Mum and Dad

Abstract

The development of constructivist learning theory has greatly influenced the design and delivery of the Information Literacy instructional programmes. Student-centred teaching methodology has been widely adopted in the IL instruction, however, the challenges library presenters face while practicing interactive teaching methods in their classes still require further investigation. This study aims to respond to the need for a deeper understanding of IL instruction from a teachers' perspective and provide an insight into currently applied interactive practices in IL classroom teaching, as well as associated challenges and effective solutions.

An explanatory, sequential mixed methods research design has been applied to further investigate the quantitative information collected in the first phase of the project (an online survey emailed to 55 Subject Librarians at the University of Auckland (UoA)) followed by the second phase of qualitative, in-depth data gathering conducted in the form of nine individual 45 minutes long semi-structured interviews with Subject Librarians at the University of Auckland.

The findings confirm the themes already discussed in the library literature, but also reveal new and unexpected elements of IL classroom instruction offered at the tertiary level in New Zealand region. Eleven original interactive classroom activities successfully employed in IL classroom teaching by Subject Librarians at the UoA are also identified during this research project and presented in the report. Suggestions are made for further research.

Keywords: Information Literacy, teaching, activities, methods, learning environments

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with respect to MLIS Research Project (INFO 580)

'**An investigation into the interactive teaching practices of librarians in Information Literacy (IL) instruction at The University of Auckland Library'**
(hereafter referred to as 'The MLIS Research Project')
being undertaken by
Neda Zdravkovic

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Table of Contents

1. Introduction

The development of constructivist learning theory has greatly influenced the design and delivery of the Information Literacy instructional programmes. According to the American Library Association (2006), Information Literacy (IL) programmes that illustrate best practices, among other attributes, facilitate student-centred learning, support diverse approaches to teaching, include interactive and collaborative activities, respond to multiple learning styles, and link Information Literacy to ongoing coursework and real-life experiences appropriate to program and course level. The IL teaching theory and recommendations are well-known; however, the evidence of what really works in IL teaching practice at the tertiary level in New Zealand, and what does not (and why), greatly remains hidden behind closed doors of library training rooms. The challenges library presenters face while practicing interactive teaching methods in their classes, as well as librarians' personal teaching experiences, require further, in-depth investigation. Christine Bruce (2008, p. 190) claims: "We need to understand better what it means to teach and learn for informed learning." According to this author, research in the area of IL teaching and learning still requires deeper understanding of how presenters experience teaching Information Literacy at tertiary level. Bruce (ibid) concludes: "We need to investigate how best to teach, how best to help students learn; strategies need to be developed and evaluation frameworks proposed."

This study investigates the interactive teaching practices currently applied by Subject Librarians in IL classes at The University of Auckland Library (UoA), the effectiveness of these practices and the associated challenges. The research project described in this report aims to respond to the need for a deeper understanding of IL instruction experience from a teachers' perspective and provide an insight into currently applied practices in IL classroom teaching.

One of the controversies of the IL teaching practices investigated to date and described in the library literature is: How to apply multiple interactive class activities within a short timeframe of a one-shot IL session and accommodate the variety of learning styles (Kolb & Kolb, 2009; Fleming, 2001) without sacrificing the content delivery? Gathered examples of effective teaching activities and methods presented in this report can be adopted by library presenters to overcome similar challenges in their teaching. The findings of this research project are also intended to be shared in training and professional development programmes for Subject Librarians and new IL presenters. The limitation of the scope of this research project is apparent; however, its findings can be adapted and applied in teaching practice to enhance IL instruction in New Zealand and worldwide.

2. Literature review

2.1 Analysis of the interactive teaching practices from the students' perspective

Majority of library Information Literacy (IL) instruction studies investigate the interactive teaching practices from the student perspective by obtaining student feedback (using surveys) and analysing the correlation between the IL instruction and the quality of student academic coursework, e.g. the quality of the referenced research in the submitted assignments.

Macklin (2001) discusses the highly developed IT skills among Generation Y students who do not see value in attending IL sessions and the challenge this imposes to majority of library presenters. He highlights the necessity of applying the constructivist perspective and creating the problem-based learning and teaching strategy. Macklin (2001) and Spence (2004) investigate the advantages of this learning and teaching model and find that it requires a thorough preparation and testing of problems and tasks prior to their application in IL instruction. Enger, Brenenson, Lenn, et al. (2002) and Carder, Willingham & Bibb (2001) recommend the creation of short, one-shot IL instruction with problem-based learning activities. Based upon the results of student surveys and conducted interviews, the

findings of Markey et. al. (2005), Schiller (2008), Woodard (2005) and Zhang (2006), show the preference of student Net Generation for this type of interactivity and creative participation within the 'community of learners' in the IL instruction. Research also indicates (Manuel, 2002; Holliday & Li, 2004; Skiba & Barton, 2006) that the short attention span of adult learners, their need to 'learn-by-doing', interact and multitask in the learning process can be accommodated with a positive outcome by introducing interactive class activities.

2.2 Interactive teaching practices: The associated challenges

Only few studies look into the challenges of IL interactive classroom teaching in New Zealand tertiary libraries. Apart from Julien (1998), who compared the results of a survey conducted in New Zealand academic libraries to a Canadian study, and Gawith (1999), majority of library literature on the challenges of the IL interactive classroom teaching is produced in US, Canada and Europe. These studies point out that opportunities for experimenting with a variety of modes of delivery in IL classes, in order to create the one for which presenters and students feel genuine enthusiasm, are restricted by the following factors:

- It is difficult to address different learning styles during a fifty-minute long IL session since there is not much time allowed for performing activities (Dalrymple, 2002, p. 271; Julien, 1998, p. 308);
- Librarians do not get multiple opportunities to build a rapport with a class or group of learners, or to follow up on the progress of their learning (Deemer, 2007);
- Generation Y students with highly developed IT skills are not aware of their information needs and therefore do not value the benefits of attending library sessions (Macklin, 2001; Julien, 1998; Gawith, 1999);

- Time pressures imposed by faculty and organizational staffing structure do not allow preparation of interactive student-centred activities resulting in a teacher-centred delivery (Julien & Boon, 2002; Julien, 1998; Gawith, 1999). Julien concludes: "A lack of staffing resources and resulting time pressure means that librarians are forced to teach in a teacher-centred way…Comments indicate frustration with faculty who request user education sessions without allocating sufficient time to deliver material adequately" (ibid, p. 308)

Dalrymple (2002) based her research on a 33-question survey completed by approximately 1000 members of the ALA's Library Instruction Round Table in 2000. The analysis of survey results showed that: "One of the biggest concerns expressed by the survey participants was that it is difficult or impossible to address different learning styles in the typical one-shot instruction session." In their words, a fifty minute IL session "doesn't leave much time for anything…for we often don't get multiple opportunities with a class or group of learners". (Dalrymple, 2002, p. 271).

2.3 Interactive teaching practices: Examples and activities

Several collections of interactive teaching activities have been published in the UK and US. They contain detailed and well structured descriptions of classroom activities which have been initially applied by authors in their IL teaching practice and consequently recommended as the most effective. Sittler & Cook (2009), Hunt & Birks (2008, 2003), Gradowski, Snavely & Dempsey (1998) analyse interactive classroom activities according to the IL standards they relate to, level of interaction achieved, student feedback and behavior. Some of the activities have been designed by authors; several have been found in the international body of IL literature. Sittler & Cook (2009) have also included one example of IL activity originating from New Zealand and practiced by librarians at The University of Auckland. However, a comprehensive study resulting in a significant collection and

analysis of interactive IL teaching practices applied in New Zealand tertiary libraries has not been conducted in this region to date.

2.4 Learning environments and the effectiveness of IL instruction

The investigation into the models of Constructivist Learning Environments (CLEs) has shown that interactive class activity-based teaching methodology is not sufficient indication that the student-centred learning has taken place. Jonassen (1999 & 1994) highlights the importance of timing – of performing the interactive learning activities at the well planned and anticipated right moment during the instruction session. Assigning interactive activities to students is not an evidence of their engagement, according to Jonassen (1999 & 1994), Hannafin, Land & Oliver (1999). They believe that without successfully created CLEs, completing the interactive class components cannot result in active learning. Information resources, cognitive tools and conversation and collaboration tools (scaffolding methods) are analysed by these authors as essential interdependent components of successful student-centred teaching (Jonassen & Rohrer–Murphy, 1999, p. 69). One of the main measures for designing CLEs, based on activity theory, is analyzing the CONTEXT of interactive classroom activities. Jonassen & Rohrer-Murphy (1999, p. 75) conclude: “Activity theory argues that decontextualised performance produces little if any understanding… Activity itself is both defined by and defines context.” Without the relevant context for performing the activity, according to the activity theory postulate, the activity itself has no meaning or effect. Jonassen (1999, p. 230) describes CLE models in more detail and concludes that “In most CLEs, learners need to explore, articulate what they know and have learned, speculate (conjecture, hypothesize, test); manipulate the environment in order to reflect on what they did, why it did or didn’t work, and what they have learned from the activities.”Carol Collier Kuhlthau (1994, p. 5) also highlights the significance of creating an engaging learning environment. Kuhlthau concludes: “Innovative ways of guiding and

coaching students through the early stages of exploration and formulation need to be developed. “In her PhD thesis, Gwen Gawith strongly highlights that, if Information Literacy learning is to be effective, “learning environments must be designed” (Gawith, 1999, p. 161).

Hannafin, Land & Oliver (1999) discuss Open Learning Environments (OLEs) and conceptual versus procedural scaffolding teaching methodology, as well as metacognitive and strategic scaffolding methods. In this research project, the conceptual teaching approach will be applied as one of the main criteria in data analysis.

James Elmborg (2006) and critical IL theorists also follow similar direction in the analysis of the effectiveness of IL instruction. They point out the importance and necessity for practicing IL student centered teaching methods not only within the context of library literacy, but within the global paradigm of multiliteracies (context). Similarly to activity theorists, critical IL theorists point out that, in order to ensure and realise CLEs and Open Learning Environments (OLEs), literacy pedagogy cannot be approached as a restricted project, formalized, monolingual and mono-cultural. Elmborg concludes (2006, p. 195): “We need to talk instead about multiple literacies, both in terms of diversity in human cultures and diversity in message formats.” The data collected during this research project will also be measured within the context of the critical IL paradigm.

Kolb and Kolb (2009) investigate the experiential learning concept of the learning space. They find play a necessity to the practice of experiential learning, “Be it games, role plays, outdoor adventure training or “playing” with ideas in the creative process” (2009, p. 2). Kolb and Kolb also conclude: “In particular, our recent research on the importance of learning spaces stands to be enriched by the central concept of the *ludic* or play space...”(ibid). Based on the findings of their qualitative analysis of a Softball League Play case study, they find that: “In play, learners achieve authentic and higher order learning by creating their own game rules and conduct. Second, an equal value is placed on the

process and the outcome of learning." (Kolb & Kolb, 2009, p. 23). Both authors also highlight that a truly educative experience sees no difference between utility and fun, the process and the outcome. Hoffman and Bicknell-Holmes (2000) describe the effects of the 'discovery game' applied in the IL instruction as a trigger technique for 'incidental learning'. Leach and Sugarman (2006, p. 195) conclude that: "Knowledge retention can be increased when using an entertaining game to review and reinforce material".

2.5 Theatrical teaching techniques

Another method of enhancing student attention and participation, significantly discussed in the IL literature, is the use of theatrical teaching techniques. Qualitative research studies and participant observation analysis show that not every teaching environment allows this kind of performance, but many, however, do. Tauber, Mester and Buckwald (1993) and Schonmann (2005) are some of the authors whose preference is towards theatrical teaching approach. They draw the parallel between teaching and stage acting/performing and argue that a few dramaturgical techniques can be applied in classroom environment to enhance students' concentration and knowledge retention, as well as to enliven the classroom atmosphere. Theatrical techniques include: improvisation (an activity being developed according to its participants' interpretation and response), rehearsed and deliberate body movements that illustrate content being presented; tone of voice; facial expressions; presenters' dress code; eye movement (looking in particular direction); the speed and dynamics of presenter's speech; intentional change of a presenter's physical position in the classroom. The library IL literature and education studies highlight the importance of presenters' attitudes towards students as specific audience experiencing a specialised kind of performance resulting in their engagement and successful learning; treating them not only as students who are learning during each session, but as audience leaving the classroom with a particular associated feeling - after the IL session, they may be

tired, 'drained', exhausted, numbed, exalted, inspired, enthused, lifted, surprised, entertained, mesmerised, etc. The way the audience leaves each IL instruction session entirely depends on the presenter and his/her skill to evoke and raise particular reaction, learning experience or feeling. Trefts and Blakeslee (2000), Information Skills Librarians from California State University, have trialed and successfully incorporated comedy and humour into their IL classes and library orientation presentations. They find that: "Interactive learning activities are always more fun when they can be entertaining and humorous, as well as educational." (2000, p. 376). Tauber, Mester and Buckwald (1993, p. 24) highlight the fact that award-winning teachers use humour significantly in comparison with their not so successful counterparts in order to clarify course content. They conclude that humour invites students to take risks in the classroom "because it softens the blow of failure" and it makes them realise that" learning and participating in class, even if the incorrect answer is given, can be exciting, fun and safe"(2000, p. 25).

This research project investigates the presence of theatrical teaching techniques and humour in the IL instruction at the University of Auckland, its role in creation of CLEs and OLEs, and analyzes the positive and negative implications of such approach, once identified, in current practice.

2.6 Analysis of the interactive teaching practices: The teachers' perspective

Only few studies in library literature discuss the effectiveness of the interactive teaching methods from the teacher perspective. After conducting a series of semi-structured interviews with academic librarians, Walter (2008) concludes that the investigation into the IL teaching practice from the instructing librarians' perspective still requires further, more in-depth studies. Julien & Boon (2002) investigated teaching methodologies employed by instruction librarians in the Canadian libraries. They applied the semi-structured interview approach to collect data and their findings are surprising: "Clearly, both lack of pedagogical training and a lack of resources were limiting the ability of these

respondents to develop innovative, interesting instructional models. "(ibid, p. 145) Koufogiannakis and Wiebe (2006, p. 20.) identify the gap in the existing research output and strongly advocate a necessity for further, empirical research into interactive IL instruction practices. They conclude: "Active learning and learner-centred instruction did not have enough studies to reach any conclusions about their effectiveness." Moniz (2007, p. 56) also points out the necessity of further, in-depth research on applying a variety of student–centred teaching methods within one-shot IL session.

2.7 Interactive teaching practices: New Zealand studies

One of the major New Zealand evidence-based investigations into the IL constructivist teaching methodologies has been completed by Gwen Gawith. In her doctoral thesis, Gawith (1999, p. 161) emphasizes that learning environments must be designed if Information Literacy learning is to be effective. Gawith (ibid) provides evidence that the design of the learning environment (and not only technology and session content) determines the quantity and quality of student learning. Wang (2007, p. 152) discusses one of the main elements of collaborative learning: the 'community of learners' where students take on the role of collaborative community members. Based on participant observation and literature research, Zdravkovic (2010) analyses and describes a group of six interactive IL teaching activities the author has trialed in her own IL teaching.

2.8 Conclusion: where are the gaps?

The literature on IL teaching approaches practiced in an academic library setting is rich with recommendations and examples of interactive teaching techniques. However, only few among these originate from New Zealand, such as Pang & Begum (as cited in Sittler & Cook, 2009), Wang (2006, 2007), Gawith (1999) and Zdravkovic (2010). Authors such as Wang (2006, 2007), Darlymple (2002), Koufogiannakis & Wiebe (2006) and Moniz (2007) highlight the necessity for further, empirical

research into interactive IL instruction practices. There is scope for further study which may provide answers to the following:

- What methods IL presenters in New Zealand academic libraries apply in their daily teaching to engage their students and enhance knowledge/skill retention and how do these methods relate to the acknowledged practices in overseas tertiary libraries?
- What are the challenges of employing the interactive teaching activities in the IL classroom instruction in New Zealand academic libraries and which techniques library presenters use to resolve them?

3. Objectives

The purpose of the investigation is to identify the currently applied student-centred teaching and learning activities at the University of Auckland (UoA) Library. The study will focus on the analysis of their effectiveness in the context of the activity theory (Jonassen & Lund, 2000) and constructivist teaching and learning theory. The study will report on the challenges Subject Librarians at the University of Auckland Library encounter while employing the interactive, student-centered teaching and learning activities in their IL instruction sessions.

4. Research questions

The broad questions that will guide this study are:

1. What particular student-centred, interactive teaching activities are practiced by Subject Librarians in a variety IL instruction sessions (extracurricular, intercurricular and intracurricular) at the University of Auckland Library?
2. Which are the most effective interactive teaching practices employed by Subject Librarians in IL instruction at the University of Auckland?

3. What challenges Subject Librarians at the University of Auckland Library encounter while employing the interactive, student-centered teaching and learning activities in their IL instruction sessions?

5. Researcher bias

The researcher has a four years' experience working as an IL presenter at the UoA Library, and therefore is familiar with some of the interactive teaching techniques currently utilized by colleagues, and has also been in the position to apply them in practice. Subject Librarians interviewed during this project are the ones who do not directly work with the researcher, so that potential bias may be avoided, especially in the analysis of the gathered data.

6. Research paradigm

This research project is based on the pragmatist paradigm and its focus is on the investigation of the practical implications ("what works and what does not work") of applying the interactive teaching methods and activities in IL classes at The University of Auckland Library. Pragmativism supports the mixed methods approach and the analysis of knowledge based on its practical usefulness. Denscombe (2007, p. 117) points out that: "Pragmatism is regarded as the philosophical partner for the mixed methods approach." By utilizing the combination of two methods to collect data: a survey (quantitative) and semi-structured interviews (qualitative), this investigation aims to identify interactive teaching methods proven successful in practice, so that they can be adopted by a wider IL presenter audience.

7. Theoretical framework: Constructivism

The social cognitive learning theory, developed by Albert Bandura (1977) in the early 1950's, stresses the idea that human learning occurs in a social environment and the fundamental significance of

enactive (learning by doing, action) and vicarious (learning by observing others, observation) learning models. Based on the epistemology of social cognitive learning, Brunning, Piaget and Vygotsky have further developed constructivist learning theory. The constructivist theory argues that individuals are active learners who form or construct most of what they learn and understand for themselves based on their experiences. The emphasis is placed on the importance of social interactions in the acquisition of knowledge and skills; on learner's information processing as a central cause of learning. Constructivist learning theories promote students' engagement as one of the key factors in successful learning and knowledge building. The focal point of instruction is shifted from teacher-centered towards student-centered approach. Constructivism does not propose that learning principles are to be discovered and tested, but rather that learners create their own learning. There are many varieties in constructivist viewpoints, and no version can be claimed as more correct than any other (Schunk, 2008, p. 236).

Constructivism has influenced educational thinking about curriculum and instruction. It underlies the emphasis on the integrated curriculum in which students study a topic from multiple perspectives. Emphasis is on minimal instructional guidance. Instructional methods that are mapped better within the cognitive framework may, as Schunk (2008, p. 241) concludes: "Actually produce better learning".

7.1 Vygotsky's social development theory, social constructivist views and activity theory

Vygotsky (1978) considered the social environment to be critical for learning and believed that social interactions transformed learning experiences. Vygotsky's theory stresses the interaction of interpersonal (social), cultural-historical and individual factors as the key to human development. The cultural-historical aspects of Vygotsky's theory emphasise that the learning and development cannot be dissociated from their context (Schunk, 2008, p. 243). Based on Vygotsky's beliefs, the activity

theory was further developed in 20th century in relation to the constructivist learning environments. It focuses on the interaction between human activity and consciousness and builds upon Vygotsky's concept of consciousness as a phenomenon that "unifies attention, intention, memory, reasoning and speech" (Vygotsky, 1978, p. 7). According to Jonassen and Rohrer-Murphy (1999, p. 65), "Consciousness is manifested in practice - "you are what you do"…So, activity theory claims that learning and doing are inseparable, and that they are initiated by an intention." (ibid).

As it has already been discussed in the ***2.4 Learning environments*** section of this report, activity theory also defines interactive learning activities by their dialectic context and emphasizes that, without relevant learning environment, activities themselves have no meaning and cannot initiate the student-centred learning. Jonassen & Rohrer-Murphy (1999, p. 62) conclude: "Activity cannot be understood or analysed outside the context in which it occurs." There are six main evaluation criteria proposed by the activity theorists for measuring the outcomes and effectiveness of interactive IL classroom activities (ibid, p. 74) and they will be used in this research project as a basis for analysis of the qualitative data. The criteria are:

1. Clarity & purpose of activity system;
2. Analysis of the elements of activity system (subject, community & object, or - who, what, where, how);
3. Analysis of activity structure (activity level, action level & operations level);
4. Analysis of activity tools and mediators (tools, rules and roles, including cultural and situational conditions affecting the course of an activity);
5. Analysis of activity contexts (subject-driven and community-driven, real-life and non-instructional contexts);

6. Analysis activity system dynamics (how activity components affect each other and what are historical adjustments/ modifications made within the activity system to date or in future).

7.2 Zone of Proximal Development (ZPD)

Vygotsky (1978) introduced the Zone of Proximal Development representing the amount of learning possible by a student given the suitable and the most adequate instructional conditions. It is "the distance between the actual developmental level as determined through problem solving under adult guidance or in collaboration with more capable peers." (Vygotsky, 1978, p. 86). Teacher and learner work together on a task that the learner could not perform independently due to difficulty level. According to Bruner (1985), this culturally mediated interaction produces cognitive change when it is internalized in the learner's mind. From a cognitive perspective, learning is an internal mental phenomenon. A central theme is the mental processing of information: its construction, acquisition, organization, coding and retrieval from memory. Critically important is how students use, transform, code, store and retrieve information. Schunk (2008, p. 21) concludes: "The ways that learners process information determine what, when and how they learn."

7.3 Learning theories in the context of this project

It appears that, regardless of their perspective, all learning theories share instructional commonalities that enhance learning. Three of them this research will particularly focus on are:

- Social models facilitate intrinsic motivation and student-centred learning;
- Without appropriate context, activity itself has no meaning and does not enhance learning;
- Without establishing the appropriate learning environments, such as Constructivist Learning Environments (CLEs) or Open Learning Environments (OLEs), student-centred learning and engagement cannot take place despite employed interactive activities during the classroom instruction.

8. Methodology and data collection

The main reason for selecting the mixed research design, involving an online survey and semi-structured one-on-one interviews, is the belief that the use of both qualitative and quantitative methods can ensure access to a sufficient range of in-depth data and complementary findings. The qualitative approach to this study provides an in-depth data on interactive teaching practices; however, it does not ensure the necessary scope of data related to interactive teaching practices applied by majority of IL presenters at the UoA Library. Therefore, an *explanatory sequential mixed methods design* (Given, 2008, p. 527) has been applied in order to explain the quantitative information collected in the first phase of the data gathering followed by the second phase of qualitative, in-depth data gathering. Another reason for selecting this particular method is, as Creswell (2009, p. 215) points out, its usefulness in situations when "unexpected results arise from a quantitative study". From the very beginning of the data collection phase of the project, the researcher has been aware that no similar types of research projects have been conducted to date in New Zealand. Therefore, the emergence of the unexpected data from the online survey has been anticipated and selection of sequential explanatory strategy ensures further, in-depth investigation. In this study, priority is given to both quantitative and qualitative data. While survey investigation excels in its scope, semi-structured interviews provided an in-depth insight into the quantitative data. Interview questions (*see* Appendix 5) have been designed based on the survey data analysis. The integration of the two types of data also occurs during the data analysis and interpretation phase of this research.

The challenges/drawbacks of this form of research are:

- The extensive data collection (two methods employed instead of one);

- The length of time involved in data collection (the data collection phase of this research project has taken two months of continuous work);
- The time-intensive nature of analysing both text and numeric data (the data analysis phase of this research project has taken two months of continuous work);
- The requirement for the researcher to be familiar with both quantitative and qualitative forms of research (Creswell, 2009, pp. 210 - 215).

By engaging an online survey emailed to fifty five Subject Librarians currently employed at the UoA Library and gathering their responses, required scope and the collection of desired data has become available to the researcher. An online survey, as a quantitative method of investigation, emerged as a suitable pathway to obtain the information on:

- Examples and descriptions of specific interactive teaching activities Subject Librarians at the University of Auckland Library currently employ in their classes;
- Types of interactive, student-centered activities practiced;
- Interactive teaching practices Subject Librarians identify as the most effective based on their teaching experience.

Human Ethics Approval from the School of Information Management at Victoria University of Wellington was obtained, as well as the permission to conduct the research from the University of Auckland Library (*see* Appendix 7). The survey questions (*see* Appendix 4) were uploaded into the SurveyMonkey (http://www.surveymonkey.com/) web based application.

8.1 Pilot study

One Subject Librarian was asked to complete the online survey prior to its final distribution and to provide feedback on the survey structure, clarity and relevance of questions and functional design. The feedback received from the pilot survey trial was positive, the librarian's recommendations were

implemented and the survey adjusted to ensure clarity and logical sequence of questions. The data obtained from the pilot investigation were also included in the final research data summary.

8.2 Survey data collection

The University of Auckland Library HR Manager emailed the survey link to all (55 in total) Subject Librarians currently employed in the institution. The timeframe given to participants to complete the survey was 14 days. Thirty librarians (83% of all Subject Librarians employed) completed the survey within the given timeframe. Participants were given a period of two weeks from the survey release date to pull out of research if they wished. There were no withdrawal requests received to date. The survey data was downloaded from the SurveyMonkey and the online survey account deleted after the data collection. The SurveyMonkey software was also used in generating the data analysis reports and charts.

8.3 Interview data collection

The interview questions (*see* Appendix 5) were designed to ensure collection of in-depth data on themes identified in the survey results *(see* Appendix 12). The following was investigated in each of the nine conducted interviews:

- In-depth information on specific interactive activities applied in IL classes by interviewees;
- Challenges librarians encounter while applying the interactive teaching activities;
- Effective interactive teaching practices applied in IL classes by participants.

Currently employed Subject Librarians at The University of Auckland were invited to take part in this research project via an email posted by Associate University Librarian, Faculty Services & Learning Services, asking them to respond if they would like to be interviewed by the researcher. (*see* Appendix 8). The participant information sheet (*see* Appendix 1) and interview questions were also emailed to librarians at the same time. Nine Subject Librarians volunteered and were required to

sign a consent form (Appendix 3) prior to beginning of each interview. All interviews were recorded on the Sony USB audio recorder after every participant gave their permission to do so. All audio recordings were downloaded as mp3 files onto the researcher's computer and stored there until the completion of the project. They were transcribed by the researcher. Transcription process began immediately after completion of all nine interviews. Each hour of interview took four hours to transcribe and additional two hours to proofread, analyze and code. It has taken a total of fifty four hours of continuous work to complete this phase of the research project. Each participant was emailed the interview transcript and asked to provide feedback with suggestions and any further edits to ensure the precision of the written data. All nine transcripts were proofread by interviewees and approved for their accuracy and completeness. After the completion of their interview, Subject Librarians emailed the researcher their examples of the teaching materials discussed, such as images, PowerPoint slideshows, worksheets, handouts, and readings given to students during the completion of each of the described activities. Participants were given a period of two weeks from the interview date to pull out of research if they wished. There were no withdrawal requests received to date. Each interview took place in a Subject Librarian's office, in a private setting, in front of the computer screen with internet connection. At the very beginning of the interviews, each participant described in detail one interactive classroom activity applied in practice and explained the use of relevant teaching materials. Each semi-structured interview was a unique experience with different workflow. Additional prompt questions were asked by the researcher and original interview questions adjusted during the conversation to evoke in-depth and detailed comments and reflection. The researcher made an effort to ensure an open, friendly, casual and relaxed interview atmosphere and the tone of each conversation, so that participants were able to respond openly and talk freely about their teaching experiences. One of the researcher's priorities was to ensure that each participant

experienced the interview as a pleasant and enjoyable experience. Participants' responses and contributions were in-depth and rich and even beyond the required scope of this project.

9. Population

The study is confined exclusively to the sample group of 55 currently employed Subject Librarians at the University of Auckland Library. The limitations on the sample include:

- The UoA Library staff employed at other than Subject Librarian positions, who do not teach regularly and do not deliver such a broad variety of IL sessions, have not been invited to take part in this project;
- The research does not investigate the interactive teaching practices applied at other tertiary libraries in New Zealand and therefore the generalisation and utility of findings are limited by scope and can be considered only as the basis for further research;
- The research does not investigate the effectiveness of the identified interactive teaching practices from the student perspective. The reason for exclusion of this approach is based on the fact that the existing literature on the interactive teaching methods applied in IL instruction already provides such evidence. Another reason is that the longitudinal studies required to investigate the effects of the interactive teaching approach on student learning are beyond the scope of this particular project.

10. Term definitions

ALA - abbreviation for American Library Association;

Student – centered interactive teaching classroom activities - term includes activities not only created in the IL instruction context, but also found in a variety of resources within education discipline, including scholarly literature, and adapted and applied within the IL instruction. Activities are not necessarily restricted to a specific session structure and content; they can be applied and

reapplied within a variety of Information Literacy instructional (classroom) situations, frameworks and contexts.

Information Literacy- basis for life-long learning, involves effective utilisation of information, such as: determining the need for information, accessing information effectively, critically evaluating the information, using the information ethically, understanding its cultural, legal and economic aspects and more;

IL – abbreviation for Information Literacy;

SL – abbreviation for Subject Librarian;

CLEs – abbreviation for Constructivist Learning Environments in the context of face-to-face ('live') classroom instruction where learners interpret and construct meaning based on their own experiences and interactions. CLEs enable active engagement of learners in meaningful projects and activities that promote exploration, experimentation, construction, collaboration, and reflection;

OLEs – abbreviation for Open Learning Environments in the context of IL classroom instruction. OLEs elicit students' unrestrained explorative behavior and minimal teacher's input;

UoA - abbreviation for The University of Auckland;

Teaching methods - in this research study the term relates to constructivist teaching methodology;

Teaching technique/method – in this study the term relates to student-centred, interactive teaching techniques, such as:

- *Experiential learning* - includes cooperative learning, collaborative learning, project-based learning through experience;

- *Problem-based learning or PBL*– collaborative learning, includes problem solving and hands-on learning in classroom setting, as well as group interaction and discussion, games & quizzes;
- *Discovery learning methods:* guided discovery, problem-based learning, simulation-based learning, case-based learning, incidental learning;
- *Scaffolding (cognitive apprenticeship)* – teacher guided instruction. Includes: **Conceptual scaffolding** (guides learner what to consider (why - the big picture), externally imposed contexts); **Procedural scaffolding** (tutoring on system functions and features, how to utilize available resources and tools); **Metacognitive scaffolding** (ways to think about a problem being studied, guidance in how to think during learning) and **Strategic scaffolding** (guides learner how to approach learning tasks or problems, supports analysis, planning, strategy and tactical decisions during open-ended learning).
- *Learning cell method* – students work collaboratively in pairs while completing the given task;
- *Think-pair-share* technique **-** students are paired together to reflect on the learning and share with the rest in the class;
- *Resource-based, anchored instruction* – students utilize a variety of information resources to solve/discuss problems, e.g. based on the video screening, the class develops the discussion on a given topic;
- *Theatrical teaching techniques* - role-play, humor, acting;
- *Reciprocal teaching* - students in the role of a teacher or as presenters in a class - peer teaching;

- *Jigsaw model* – class divided into small groups and content material is divided into as many sections as there are groups. Students learn assigned material and subsequently teach others (reciprocal teaching).

11. Results

Interview transcripts were read carefully and interpretive, data-driven (open) coding was applied by the researcher. Major themes were identified based on their relevance to the research questions, and text grouped under each code. Consequently, axial (theoretical) coding (Gibbs, 2007, p. 50) was undertaken in order to identify relations and links between codes and group them according to their correlativity (*see* Appendix 10). The key focus was on *analyzing meaning* (Kvale & Brinkman, 2009, p. 197) and involved meaning condensation and meaning interpretation.

Individual interactive classroom activities described by Subject Librarians during the course of all nine interviews were separated out from the transcripts and linked with the relevant teaching and learning materials also provided by interviewees (see Appendix 11). The activities have been analysed in the context of the activity theory, learning environments theory and constructivist learning theories. The identified correlations between codes and broad themes are also explained in detail in the discussion section below.

Survey data was downloaded from the *SurveyMonkey* in the form of automatically generated descriptive statistical reports and charts (*see* Appendix 12). Open ended survey responses were separated out and grouped together to be analysed in correlation to the interview data (*see* Appendix 12, Question 7).

11.1 Survey results

This section will set out the results from each of the survey questions. The tables positioned beneath each question contain the summary of the raw data, in the same format as originally downloaded from the *SurveyMonkey* application.

Q1: How long have you been teaching IL classes?

How long have you been teaching Information Literacy (IL) classes?		
Answer Options	**Response Percent**	**Response Count**
Less than one year	3.3%	1
1-5 years	36.7%	11
More than 5 years	60.0%	18
answered question		**30**
skipped question		**0**

The survey was emailed to 55 Subject Librarians at The University Library in total, and the results show that the majority of IL presenters who submitted their responses have significant teaching experience and hence are confident enough to share that experience and teaching methods applied.

Q2: How many IL classes do you approximately teach per year?

How many IL classes do you approximately teach per year?		
Answer Options	**Response Percent**	**Response Count**
1-10	23.3%	7
10-30	43.3%	13
30-50	13.3%	4
50-70	10.0%	3
70-100	10.0%	3
answered question		**30**
skipped question		**0**

The crossover of the data obtained for the survey questions number one and two, obtained from the *SurveyMonkey* application, shows that the three Subject Librarians who have been teaching the largest number of IL sessions per year (70-100) are the ones who have also been teaching the longest period of time (more than 5 years). The scope of the data obtained during this investigation

is too narrow to allow broad generalisations, however, it does suggest the correlation between the teaching experience and the presenters' confidence to take on and teach a greater number of sessions. The results also indicate that the majority of respondents (66.6%) teach between 1 and 30 classes per year. This shows that the opportunities for applying a variety of interactive teaching methods and trailing them are minimal for IL presenters due to the relatively small number of IL classes taught. The small number of classes per presenter is not an evidence of the reduced quality or effectiveness of the IL instruction, however, it does show that Subject Librarians are in position to 'make do' the most with the minimal teaching time given. Teaching 10 or 30 IL classes per year does not provide sufficient time for librarians to build a rapport with different student groups and for the creation of open or constructive learning classroom environment. This also indicates that the challenge of applying the adequate interactive teaching methods and activities in IL classes is significant and perhaps even greater than it has originally been shown and discussed in the IL literature to date.

Q3: What particular methods do you apply in your IL classes to get students interested in the topic and become actively engaged?

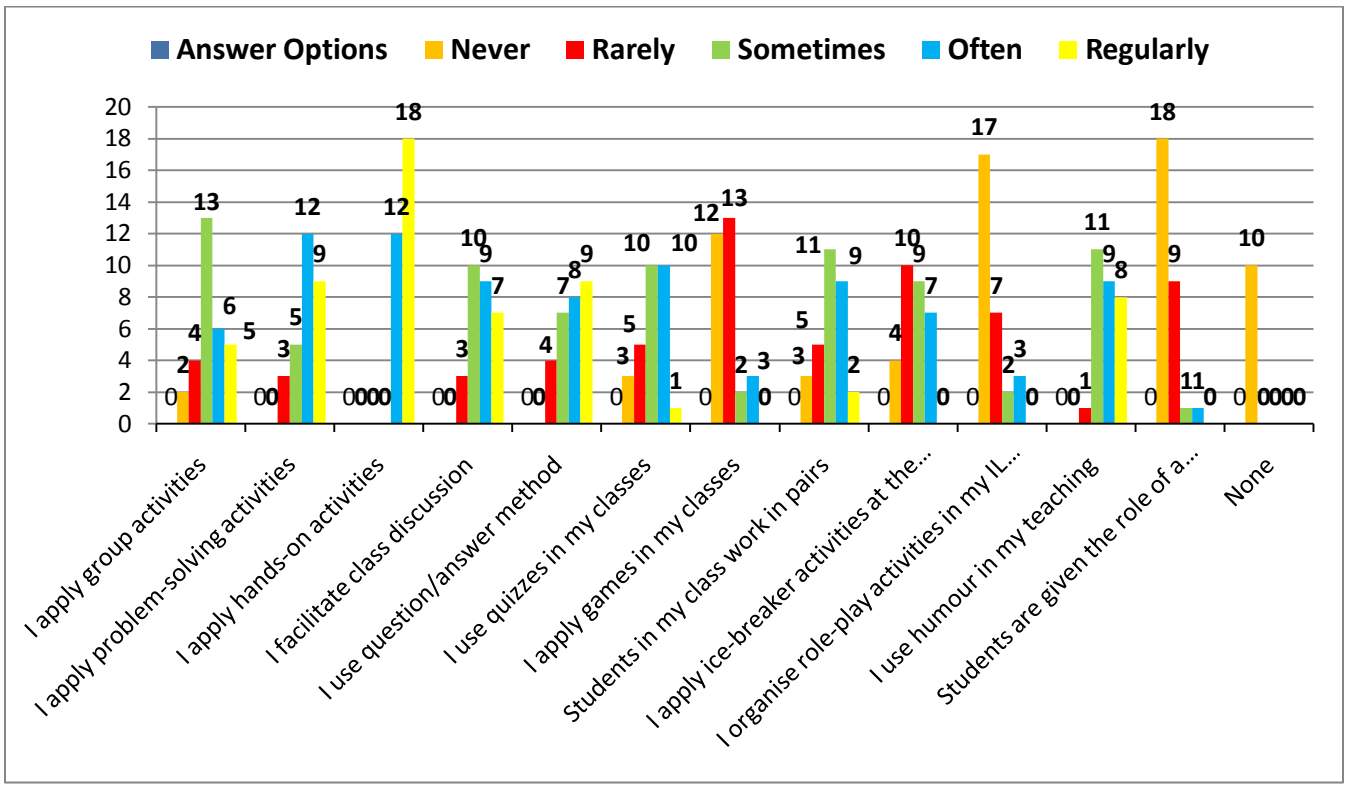
What particular methods do you apply in your IL classes to get students interested in the topic and become actively engaged? Please select relevant statements, or add your own:						
Answer Options	**Never**	**Rarely**	**Sometimes**	**Often**	**Regularly**	**Response Count**
I apply group activities	2	4	13	6	5	30
I apply problem-solving activities	0	3	5	12	9	29
I apply hands-on activities	0	0	0	12	18	30
I facilitate class discussion	0	3	10	9	7	29
I use question/answer method	0	4	7	8	9	28
I use quizzes in my classes	3	5	10	10	1	29
I apply games in my classes	12	13	2	3	0	30
Students in my class work in pairs	3	5	11	9	2	30
I apply ice-breaker activities at the beginning of my classes	4	10	9	7	0	30
I organise role-play activities in my IL classes	17	7	2	3	0	29
I use humour in my teaching	0	1	11	9	8	29
Students are given the role of a presenter in my classes	18	9	1	1	0	29

None	10	0	0	0	0	10
					answered question	**30**
					skipped question	**0**

The purpose of this survey question is to obtain information on whether the librarians employ interactive teaching methods in their teaching or more traditional, teacher-centred instruction. According to the data collected, the following types of interactive teaching practices are used most extensively by Subject Librarians at The University of Auckland:

1. **Problem-based learning activities:** hands-on activities (100%), problem-solving activities (86.6%), class discussion (86.6%), question/answer model (80%), group activities (80%), quizzes (70%), ice-breaker activities (53.3%);
2. **Discovery learning activities:** hands-on (100%), problem-solving activities (86.6%), quizzes (70%);
3. **Jigsaw model:** group activities (80%);
4. **Procedural scaffolding:** hands-on activities (100%);
5. **Metacognitive scaffolding:** problem-solving activities (86.6%);
6. **Experiential learning:** work in pairs type of activities (73.3%);
7. **Theatrical teaching technique:** humour (93.3%);
8. **Think-pair-share technique:** work in pairs type of activities (73.3%);
9. **Learning cell method:** work in pairs type of activities (73.3%);

The following types of interactive teaching activities have been identified as the ones that **are avoided** by Subject Librarians in practice: **reciprocal teaching**, e.g. peer teaching, students in a role of a presenter (90%); **games** (83.3%); **role-play** activities (80%); **ice-breaker** activities (46.6%).



Several other interactive teaching activities are also avoided in practice by a smaller number of respondents (26.6% - 20%) and those are the ones that are being practiced extensively by the remaining 80 % - 73.4% of respondents. The non-applications of the activities such as work in pairs (26.6%), quizzes (26.6%) and group activities (20%) may indicate the personal preference of these presenters towards applying different types of student-centred teaching activities, and not an evidence of the activity ineffectiveness. For more details, see the summary table below.

TYPE OF ACTIVITY	Used REGULARLY/OFTEN/ SOMETIMES	Used NEVER/RARELY
Experiential learning - includes cooperative learning, collaborative learning, project-based learning;	Work in pairs 73.3% (22) Games 16.6% (5)	Work in pairs 26.6% (8) Games 83.3% (25)
Problem-based learning – collaborative learning, includes problem solving and hands-on learning in classroom settings, as well as group interaction and discussion, games & quizzes	Hands-on activities 100% (30) Problem-solving activities 86.6% (26) Class discussion 86.6% (26) Question/answer model 80% (24) Group activities 80% (24) Quizzes 70% (21) Ice-breaker activities 53.3% (16) Games 16.6% (5)	Ice-breaker activities 46.6% (14) Games 83.3% (25) Quizzes 26.6% (8) Group activities 20% (6)
Jigsaw model – class divided into small groups and content material is divided into as many sections as there are groups. (reciprocal teaching).	Group activities 80% (24)	Group activities 20% (6)
Reciprocal teaching - students in the role of a teacher;	Students in the role of a presenter 6.6% (2)	Students in the role of a presenter 90% (27)
Theatrical teaching techniques - role-play, humor;	Humour 93.3% (28) Role-play activities 16.6% (5)	Role-play activities 80% (24)
Resource-based, anchored instruction – students utilize a variety of information resources to solve/discuss problems, e.g. based on the video screening, the class develops the discussion on a given topic;	Games 16.6% (5) Online games 3.33% (1) Online tutorials 56.66% (17) Online quizzes 36.66% (11) Audio recordings 26.66% (8) Videos 33.33% (10)	Games 83.3% (25)
Think-pair-share technique **-** students are paired together to reflect on the learning and share with the rest in the class;	Work in pairs 73.3% (22)	Work in pairs 26.6% (8)
Learning cell method – students work in pairs;	Work in pairs 73.3% (22)	Work in pairs 26.6% (8)
Procedural scaffolding (cognitive apprenticeship) – guided instruction on system functions and tools;	Hands-on activities 100% (30)	
Conceptual scaffolding - the big picture, guided instruction on externally imposed concepts;		
Metacognitive scaffolding- guided instruction on how to think about problems/themes being studied;	Problem-solving activities 86.6% (26)	
Strategic scaffolding- guided instruction on how to approach learning tasks, supports learning analysis and planning;		
Discovery learning methods: guided discovery, problem-based learning, simulation-based learning, case-based learning, incidental learning;	Hands-on activities 100% (30) Problem-solving activities 86.6% (26) Quizzes 70% (21) Games 16.6% (5)	Games 83.3% (25) Quizzes 26.6% (8)

Q4: What types of teaching resources and materials do you use in your IL classes?

Raw data:

What types of teaching resources and materials do you use in your IL classes? Please select relevant statements, or add your own:						
Answer Options	**Never**	**Rarely**	**Sometimes**	**Often**	**Regularly**	**Response Count**
I use videos in my classes	9	11	7	3	0	30
I utilise online tutorials in my IL instruction	6	7	9	3	5	30
I play audio recordings in my classes	12	10	7	0	1	30
I use PowerPoint slides in my IL sessions	0	5	7	5	13	30
Students are given handouts in my classes	0	1	2	2	25	30
Students are given the activity worksheets in my classes	0	1	8	10	8	27
Students are given online quizzes to complete in my class	9	10	6	1	4	30
Students are given online games to complete in my class	20	9	1	0	0	30
None	8	0	0	0	0	8
Other (please specify)						0
					answered question	**30**
					skipped question	**0**

The purpose of this question was to obtain data on the frequency and type of the resource-based, anchored instruction application in the IL classroom teaching by the Subject Librarians at the UoA Library. The findings are summarized in the table below:

Resource-based, anchored instruction - types of applied resources	**Used REGULARLY/OFTEN/SOMETIMES**	**Used NEVER/RARELY**
Use of PowerPoint presentation	83.33% (25)	16.66% (5)
Use of course handouts	96.66% (29)	3.33% (1)
Use of activity worksheets	86.66% (26)	3.33% (1)
Use of videos in IL classes	33.33% (10)	66.66% (20)
Use of audio recordings in IL classes	26.66% (8)	73.33% (22)
Use of online tutorials in IL classes	56.66% (17)	43.33% (13)
Use of online quizzes in IL classes	36.66% (11)	63.33% (19)
Use of online games in IL classes	3.33% (1)	96.66% (29)

According to the survey results, it appears that the teaching and learning resources **not** frequently used in the IL classroom instruction are:

- Online games (29 respondents)
- Audio recordings (22 respondents)
- Videos (20 respondents)
- Online quizzes (19 respondents).

However, looking at the survey responses, it appears that modest resource-based, anchored student-centred instruction does take place during the IL classes at The Univeristy of Auckland by employing online tutorials (the most frequently utilized - 17 respondents) and some use of online quizzes (11 respondents), videos (10 respondents), audio recordings (8 respondents), games (5 respondents), with the minimal application of online games (1 respondent). It is evident that the traditional teaching resources, such as course handouts, PowerPoint slideshows and activity worksheets, are the most commonly used information sources and learning tools provided to students in the IL classes at the University of Auckland Library.

Q5: What types of class activities work really well when applied in your IL teaching and which ones do not?

What types of class activities work really well when applied in your IL teaching and which ones do not? Please select relevant options, or add your own:

Answer Options	Do not work well	Rarely	Sometimes	Always	Response Count
Group activities	1	4	15	7	27
Problem-solving activities	0	0	15	12	27
Hands-on activities	0	0	9	21	30
Class discussion	0	4	14	8	26
Question/answer method	1	4	17	6	28
Quizzes	3	3	12	6	24
Games	6	6	5	1	18
Ice-breaker activities	3	6	11	1	21
Role-play activities	6	6	3	1	16
Students in the role of a presenter	7	5	5	0	17
Other (please specify)					0
				answered question	**30**
				skipped question	**0**

Data summary:

Activity	Works well SOMETIMES/ALWAYS	RARELY/ DOES NOT work well
Hands-on activities	100% (30)	0% (0)
Problem-solving activities	90% (27)	0% (0)
Group activities	73.33% (22)	16.66% (5)
Class discussion	73.33% (22)	13.33% (4)
Question/answer method	60% (18)	16.6% (5)
Quizzes	60% (18)	20% (6)
Ice-breaker activities	40% (12)	**30% (9)**
Games	20% (6)	**40% (12)**
Students in the role of a presenter	16.6% (5)	**40% (12)**
Role-play activities	13.33% (4)	**40% (12)**

The activities Subject Librarians do not practice frequently in their teaching, as indicated in their responses to Question 3, such as role plays (80%), games (83.33%), students in the role of a presenter (90%) and some ice-breakers (46.6%), are the ones that have been trialed in practice by the same group of presenters and proved problematic when applied in IL classroom teaching (see table above). It appears that the most effective interactive teaching method applied by Subject Librarians most extensively are hands-on activities, an interactive teaching practice most commonly employed to support and enhance skills-based procedural scaffolding/guided instruction ('how to use' an application, system or set of tools). One of the questions that require further research beyond the scope of this project is: To what extent IL presenters in academic libraries in New Zealand employ procedural scaffolding instruction, and to what extent are conceptual, strategic and metacognitive scaffolding methods represented in their teaching? The data shown here may be an

indication that the procedural (or 'how to') type of instruction is preferred in IL classes at the UoA, however, the scope of this research project does not allow any conclusions.

Q6: Please describe your favourite classroom activity and briefly explain why it worked well in your teaching.

The purpose of this survey question was to complement the data collected in Question 3 and obtain specific examples of effective classroom activities that 'worked' in practice. It is interesting that this is the only survey question which has not been answered by 6 participants. The reason could be the descriptive and open-ended nature of the question requiring a bit more time and attention to answer, or it may be an indication that 6 out of 30 Subject Librarians actually do not have any preference towards the interactive classroom activities regardless of whether they consistently employ them in practice or not. The required workload and the complexity of interactive teaching methods may represent an unavoidable challenge to IL presenters, rather than preferable and enjoyable practice. This topic does require more in-depth and larger scope research in New Zealand tertiary libraries and it has only been referred to briefly in this project. The following interactive activities have been identified by Subject Librarians at the UoA as the most preferable/effective ones applied in practice:

Activity Type	Description	Reason for being preferred/ effective
Jigsaw model	Working through a legal citation problem. Students liked that they needed only to contribute to a part of the citation, rather than being relied on to provide the whole legal citation.	It encouraged classroom contribution and discussion. Feedback from student evaluation forms implied that students also found this exercise valuable.
Problem-based learning *Discovery learning methods*	**1**. Quizzes (x4) **2.** An online quiz where students are asked to identify different types of citations (book, article, chapter etc).	**1.** Students seem to really enjoy the hands-on nature of quizzes and the competitive aspect of them. Students are active and engaged. **2.** Most students thought they'd do well but nearly every student got at least (if not more) one out of 5 wrong. Doing this before the class starts tends to make them listen a bit better.

Problem-based learning	**1.** Group activities and problem solving activities work well. (x3) **2.** Complex problem statements, requiring students to apply knowledge presented in the teaching session on multiple levels, in order to solve the problem. **3.** Students answer questions.	**1.** Students seem to enjoy getting to know and working with their peers. Not as intimidating as direct question/answer method. **2.** Because the students focus on a specific activity while the intended tutorial content is covered. **3**. Reporting back to the class encourages participation. **4**. Students are active and engaged. Keeps them occupied without me having to talk!
Problem-based learning *Strategic scaffolding*	**1.** Class discussion is my favourite. **2. Class discussion on how what has been learnt could be applied to study.**	**1.** This helps build a relationship with the individuals in the class and the librarian. It works well as it highlights to me as the tutor exactly where I need to direct the class and also allows the individuals in the class to realize that they are not the only person who needs help. **2. Useful because students can see benefit in what they have learnt and think actively about how to apply it.**
Theatrical teaching technique	Engaging with the students using humour.	People relax when they are smiling or laughing and will sometimes even ask questions!
Procedural scaffolding	**1.** Hands-on activities (x2) **2.** Hands on activity matching real books with catalogue entries in RILM. **3.** Teaching live, i.e. not depending on PowerPoint slides.	**1.** Keeps students' attention well. **2.** Works well as the students feel a part of the whole thing and just not sit and look at the presenter. **3.** Works well when related to students' real assignments. **4.** The students find it useful as they are learning in the live environment.
Jigsaw model *Collaborative learning*	**1.** Peer teaching (x2) **2.** Getting the students to collaborate so they realize how much they already know.	**1.** Students have to work as a group and come up with some pros and cons for using a database and then tell the others. **2.** It gives them a sense of empowerment and makes them better disposed towards the tutorial.
Jigsaw model & *Reciprocal Teaching*	Getting students to come up and demo to the class how they found the answer to a particular library question.	Works well for a library overview. Students are motivated to find the answer and they like taking the role of presenter.
Collaborative teaching & *Theatrical teaching technique*	Best has been co-teaching with the co-presenter.	Using humour to get the message across.
Employing a combination of interactive teaching methods	Small classroom -combination of activities and methods.	
Metacognitive scaffolding	Having a student provide an example of how they approached the situation and discussion and debate ensued from this.	It is fantastic in teaching because it gives buy in by participants as well as providing different avenues of thinking. Broadens the mindset of participants.

The data obtained for Question 6 matches the data obtained for Question 3 and confirms the interactive teaching methods most frequently applied in the IL classes at the University of Auckland Library. However, the survey responses to Question 6 have also revealed the new data complementing the one obtained for Question 3 which was not mentioned earlier by any of the participants. It appears that the following interactive teaching methods are also applied in the IL classes at the UoA Library: strategic scaffolding, metacognitive scaffolding & co-teaching. A combination of interactive teaching methods applied during one session was also identified by one of the librarians as the most preferable (and successful) teaching practice.

11.2 Interview results

Interview data and findings are discussed in terms of the research questions and in correlation with the survey results. The purpose of conducting nine semi-structured interviews and obtaining the answers to the interview questions (*see* Appendix 5) was to gather further, in-depth information on the following themes identified during the survey data analysis:

- In-depth information on specific interactive IL classroom activities applied in IL instruction at the UoA Library;
- In-depth information on effective interactive teaching practices applied in IL instruction at the UoA Library ('what works');
- In-depth information on the challenges of the interactive teaching applied in IL classes at the UoA Library ('what does not work well').

Research question I: What particular student-centred, interactive teaching activities are practiced by SLs at the UoA?

Activity type	Activities that 'worked well'	Activities that 'did not work well'
Problem-based learning *Experiential learning*	Hands-on, computer-based activity including group discussion (x2) (*see Appendix 11,* ***Activity 1& 9****)*	
Resource-based, anchored instruction *Experiential learning*	Exploratory, resource-based group activity (x3) (*see Appendix 11,* ***Activity 2, 7& 9****)*	
Problem-based learning	Quiz - game-based learning ice-breaker activity (see *Appendix 11,* ***Activity 3****)*	Ice - breaker
Theatrical teaching technique	Role-play (*Appendix 11,* ***Activity 4****)*	Role-play
Problem-based & game-based learning	Game-based learning (x2) (*Appendix 11,* ***Activity 5 & 6****)*	
Jigsaw model *Reciprocal teaching*	Jigsaw model, experiential & resource-based, hands-on learning activity also involving peer-teaching ('students as presenters' model) (x2) *(Appendix 11,* ***Activity 8 & 10)***	
Resource-based learning *Metacognitive scaffolding*	Discussion based group activity *(Appendix 11,* ***Activity 11****)*	
		Activities designed for small number of students
		Brainstorming

The effective ('worked well') interactive activities practiced in IL classes at the UoA Library and described by nine interviewees (Appendix 11), are analysed and discussed in detail in conjunction with the survey results in the *Discussion* section of this report.

Interactive teaching activities applied in The University of Auckland Library IL classes which did not work well in practice

1. Brainstorming

Interestingly enough, Subject Librarians who responded to the survey questions also described (during the interviews) brainstorming as one of the interactive classroom teaching activities they

avoided as it proved to be problematic when applied in practice. In this instance, brainstorming has been regarded as a different activity compared to class discussion - seen as more structured, related to a theme being introduced earlier on during the session and with specific rules and outcomes. Brainstorming, on the other hand, has been described by one of the interviewees as ill-defined action where "*students don't even know what sort of question they ought to discuss about their topic because they know so little about their subject…"* and where participants, without having a specific direction, given question or an understanding of a topic, are unable to contribute or respond in an anticipated manner. It appears that the open-ended nature of brainstorming activity does not work well in IL classroom setting. Another Subject Librarian commented that: *"I don't like to do it, it's not something that I'm not capable of, because it has nothing to do with capability - it's really easy, it's just that I think that brainstorming is very aimless, purposeless… It's something I do not like to use because I don't see that it can benefit students in a very productive way - cognitively."*

2. Role-plays

The most controversial type of interactive teaching activity commented on by both survey and interview participants is role-play theatrical teaching technique. Two Subject Librarians who have applied it in their teaching described it as a successful and effective method conditioned by the profile of participants (age, year of study, familiarity with each other) and the learning environment the activity took place in. However, role-play is described by FIVE interviewed Subject Librarians as a type of activity they "would never do" in their IL classes due to anticipated risk of positioning their students into an uncomfortable, overexposed situation. The collected data show that role-plays are not viewed by librarians as the type of activity which does not 'work well in practice', but as potentially 'risky' type of teaching method and therefore continuously avoided in practice. Interviewed librarians commented on the lack of time given in order to establish a "community of

trust" among the participants and the awareness that the first year students are particularly vulnerable if overexposed in such classroom environment. One of them said: "*That's putting quite a lot of pressure on students to actually have to do that, because we hadn't built that sense of community and trust and you often don't have the time to do that in a library session…"* Another Subject Librarian commented: "*Role-play's difficult, I think, because we have young adults and adolescents...unless they are gifted that way, I think you're playing with fire and it's deadly, I reckon."* The real reason for non-practice of role-plays seems to be the lack of conditions for establishing adequate learning environment enabling the application of such an activity. Lack of sufficient preparation time, lack of opportunity to establish a 'community of learners' (Wang, 2006) in an one-shot session and the lack of opportunity to build a rapport with the same group of students within a series of classes, are the main reasons for the lack of successful realisation of the open, constructivist learning environment during the one-shot IL class. One librarian commented: "*I prefer to leave to the lecturer do role-plays in a lecture…"*

3. Ice-breaker activity

Ice-breakers are usually short, three to five minute long extracurricular activities applied at the beginning of a session in order to enhance communication among participants, allow students to get to know each other, enhance their interest in the IL type of instruction and set the open and comfortable learning environment atmosphere. However, based on the data obtained, it appears that in practice this type of activity can take up too much class time unexpectedly and require additional instruction. Students may not be motivated enough to participate in an ice-breaker without sufficient understanding of its purpose and relevance to their studies. One librarian commented: "*The activity really became a time issue and it didn't add anything to a class, especially when we were teaching one class after another, so each time we had to reorganise at the beginning*

and set up different cartoons and/or images for students to interpret. It became a real struggle to try to complete the introduction part of each class like that."

4. Activities not adjusted for a large number of students

Interviewed librarians have pointed out that an activity that works well in a class with relatively small group of students may not necessarily be as successful in the class involving a larger number of students without prior adjustments. Time management may become an issue and students' interest may decrease due to the time required to complete the exercise. The creation of adequate learning environment in a class of more than twenty students enabling them to fully participate represents a challenge for library presenters. One of them also concluded: "*I realised that the success of the activity also depends on the type of the student group you've got in the class, and on the way they relate to each other. If the activity falls flat two times out of three, that is a good indication that something is wrong there, and that I probably shouldn't do it again without modifying it."*

Research question II: Which are the most effective interactive teaching practices employed by Subject Librarians at The University of Auckland?

Effective teaching practice	Details/subsets/models
1. Theatrical techniques (x 4)	*Teacher as performer/actor, body language, mimics, acting vs. presenting*
2. Humour (x 3)	*Use of humour with caution, avoid any relation to culture, religion and politics*
3. Co-teaching (x 3)	*Involves humour, funny examples and open dialogue method*
4. Peer teaching (x 5)	*Students in the role of a presenter, use to accommodate a variety of skill levels in a class*
5. "Extra for experts" (x 3)	*Additional content/information/ activity applied to accommodate a variety of skill levels in a class*
5. Ensuring the relevancy of activities to students' coursework, assignments and real life experiences (x 4)	*CLEs: Related cases*
6. Flexible structure of an activity (x 2)	*Enables flexible session time and content management*
7. Use of interesting, funny, controversial examples (x 4)	*CLEs: Information sources*
8. Collaboration with a lecturer (x 7)	*1. Lecturer sits in the IL class/2. Co-teaching/3.Lecturer recommends IL skill/content to be taught/4.Lecturer collaborates with SL in IL course design/ 5.Lecturer provides feedback and suggests improvements/ 6.Lecturer obtains*

	feedback from his students and shares with SL
9. Combination of different types of activities during one session (x 2)	

1. Theatrical techniques

Four interviewees have discussed the use of theatrical teaching techniques in their classes. They are aware of the similarity between their role as presenters in front of the class and the role of a performer in front of an audience (students) whose responsiveness and engagement (both emotional and cognitive) are conditioned by the presenter's performance. All four Subject Librarians have recognised the necessity to 'act out' their enthusiasm for the content and themes taught and apply techniques such as whispering, change of tone and pitch of their voice, body language and movement to illustrate and emphasise the significance of the message. One of them commented: "*And YOU have to have enthusiasm, because if you don't have enthusiasm for it - the thing is - it's not going to get through to them...You've got to jump up and down, act a little bit, at least make students believe that 'You know- this is hot stuff'...Yeah - you have to act, everyone acts when they teach.* " Another librarian said: *"The very idea of walking in front of the class - it's not natural, I mean - why should they listen to me? Why? What do I have to give them? I've got nothing special about me...So you have to act it, you have to pretend that you are interested in what you are doing and that you like it, and of course, you do like it, but you have to convey it, otherwise it's not enough. You have to have a little bit of humour and you have to be sincere; you have to be on their side."*

Theatrical teaching technique is also used by presenters to camouflage their tiredness and to build a rapport with students: *"Sometimes it's really hard to do that, especially if you've had a day that made you really tired and you have the same thing to teach three times in a row and you're feeling flat yourself… Yes, you definitely have to be a good performer to a certain degree to be able to pull a session like that to a success."*

One of the most significant uses of the theatrical techniques in IL instruction is to establish an adequate CLE during a session. In order to prompt students to participate freely in a role-play activity, presenters act out a scene or situation while explaining the rules and establishing a 'safe' learning environment where it is welcoming to be funny and creative, make others in the class laugh and expose yourself. *"It is also very comical if the teachers make fool of themselves, because then it's more comfortable for students to realise that it's fun and that it is a safe ground in the class for all to play. So, me and my co-presenter will start acting one of the scenarios in a really comic way, and then we would say to the class - 'Ok, just do something like that...' and students would laugh...And it's interesting seeing different responses from different groups of students…"*

2. Humour

Humour is intentionally applied in IL teaching as one of the theatrical techniques. *"Every now and then inserting a bit of humour perks things up in a class. I like humour, I like to use humour a lot, and I think part of it is to avoid me getting bored"*, one librarian explained. However, it is being used with caution: *"I'd never use humour related to culture, politics, religion - and those are set standards to avoid in a class,"* another librarian pointed out. This particular interactive teaching practice is also applied to establish desired classroom atmosphere and an open learning environment.

3. Co-teaching

Co-teaching is another effective interactive teaching practice applied with success by IL presenters at UoA Library. According to the interview responses, it is preferred method as it establishes a relaxed, dynamic and open learning environment, adds elements of fun, humour and an open dialogue. It appears that the open dialogue form of IL instruction especially attracts students to join in and contribute to it. Comments are:

- *"There's the dialog - an ongoing conversation between two participants/presenters who are inviting comments from each other and from students at the same time. While the second presenter is participating - she is also bringing her point of view, enriching whatever you've said, and then somebody would say something or ask something... There's also laughter - we are injecting a sort of humour into the dialog as well in order to make people feel more comfortable."*
- *"I prefer that way of teaching, because I feel that it also encourages the students to participate. I feel it's less formal approach to teaching, but personal and more interactive."*

4. Peer teaching

The collected survey data shows that peer teaching has been described as the most favourable interactive teaching practice by two librarians in Question 6 (*see* p. 40 of this report). The same two librarians indicated in Question 3 that they use the 'Students in the role of a presenter' method sometimes (1) and often (1). However, 90% of survey respondents confirmed that they 'never' or 'rarely' used this method of teaching (*see* pp. 32- 35). Based on the survey data, it appears that, out of 30 Subject Librarians at UoA, only two apply peer teaching. How come, then, that FIVE out of nine subsequently interviewed Subject Librarians described the use of peer teaching and claimed it as one of the most effective and successfully applied methods? The answer to this interesting mismatch in the qualitative and quantitative data may be in the terminology used to name this particular teaching practice, but it also may be due to the manner the library presenters relate to this activity. Five interviewees commented on peer-teaching and the use of 'students as presenters' in their classes when prompted to talk about the difficulties/challenges of applying the interactive teaching practices and brought out this method as the most effective way to remedy the presence of a variety of skills levels within one group of students. One librarian explained: "*And that's because there are different*

levels of people's knowledge. For example, they may be doing a Stage 2 class, but they've been here for four years, so you try and look at - ok, if they're not engaged than they must know, so, to make that different, you get them to do (conduct) the discussion. You get them to actually teach." Another comment was: *"Peer teaching has also been quite exciting for me to see, involving students as presenters and co-teachers. I definitely enjoyed having that cooperation and interaction in the classes I teach to undergraduate students. It has definitely invigorated me in my teaching, because it's a change, it's not something same old same old and a challenge at the same time."*

5. "Extra for experts"

This is an interactive teaching practice recommended by the interviewed librarians as the most effective when combined with a class discussion and especially aimed and prepared for students at advanced skills levels. One of the librarians explained: *"You can't just plan like - well, I've got these activities and this is 15* (minutes), *and this is 15 and this is 15 in one hour session, you've got to give yourself sometime in the session where you're dealing with issues as they arise. But I think having the "extra for experts" works really well - if you're having someone who's just sitting there, bored and that, and twiddling their thumbs, will actually really help with that."* Another comment was: *"Some activities you know people will whistle through in no time and then you can have 'extra for experts'".*

6. Relevancy of activities to students' coursework, assignments and real life experiences

According to Jonassen (1999, p. 222), one of the five essential elements of CLEs is ***related cases*** enabling learners to adapt previous experiences and gained knowledge to the current problem and retrieve from related cases patterns for successful solutions. Jonassen points out (ibid): "Related cases in CLEs support learning by scaffolding memory and by representing complexity…Case based reasoning argues that human knowledge is encoded as stories about experiences and events."

According to Hannafin, Land and Oliver (1999), one of the key values shared among the CLE designers is the importance of prior and relevant everyday experience.

During the interviews, four Subject Librarians brought up the importance of placing an emphasis on the relevancy of class activities to students' coursework and assignments, and on the creation and practice of the interactive activities embedded into the context of students' everyday reality. It is a surprising discovery of this research project that significant teaching practices, such as this one, have continuously been applied in IL classes at the UoA as the result of natural progression of the teaching method, experience and skills, however, the library presenters who have employed them may not have been aware at the same time of their theoretical background. One of the librarians' comments was: *"I think putting things into the perspective in terms of reality of what they're doing, particularly in courses for social work students who are going to be working and dealing with issues during their careers, does make things much more relevant and interesting for them."*

7. Flexible structure of an activity/interactive element performed in a class

Structuring an activity or complete session to allow additional time (if need arises during the class) for answering students' questions and additional instruction (in case students do not understand new information/concept/idea immediately), has also been highlighted by the interviewees as one of the most effective approaches to session organization and delivery. One librarian explained: *"I would prefer stopping and just sorting out why the students didn't catch up, didn't do what they're meant to do, etcetera, before I actually move on. And if I find I didn't have time in the end, I just skip the last part because the structure of my lesson is always like that - the most important part is at the beginning. At the last part usually there will be several random elements that can be skipped, yeah, and I think it is a really good idea to leave some of those unimportant themes at the end."*

8. Use of interesting, funny, controversial examples

Four librarians highlighted the importance of finding, preparing and using the intriguing, funny and entertaining examples in IL teaching practice in order to illustrate or point out relevant idea, theme or content. According to these interviewees, interesting examples, whether in graphic, visual or any other form or medium, are as engaging in practice as any employed student-centred activity in IL instruction. Just as the interviewed Subject Librarians intuitively and based on their teaching experience concluded, activity theorists have also come to the same recommendation. They point out that one of the five consisting elements of CLEs is ***information resources*** (Jonassen, 1999, p. 225) and that CLEs must provide information resources about the phenomena studied, e.g. text, documents, images, graphic, audio recordings, video, animations, etc, so that learners can understand it. They argue that the learning materials need to be organized in ways that support the thinking engaged by class activities. Jonassen (ibid) points out that: "Learners need information which enables them to construct their mental models and formulate hypotheses that drive the manipulation of the problem space." Here is how one Subject Librarian at the UoA Library engages students in an open lecture theatre setting: *"You can bring those elements of humour in, so sometimes I bring **my dog in** and talk about him to enhance themes like literature searching. An example of that would be - I've had an issue of having this dog that was really badly behaved and we had to do some research and so I went into Google and typed in the dogs' breed and got one hundred million hits', and I'd ask students: 'Ok, how am I going to find this information?', and those sorts of things really engage them."*

9. Collaboration with lecturer

The fact that SEVEN interviewees out of nine have talked about the significance and positive consequences of working with a lecturer continuously in preparing, developing, structuring and

evaluating course-related IL sessions, represents the evidence that, out of all teaching practices employed at the UoA Library, this seems to be the most influential and relevant one. The following models of collaboration between UoA Subject Librarians and lecturers have been discussed:

- **Lecturer present/ sits in the IL class:** *"Having a lecturer present in the class makes a difference because the students can then see the relevance to the rest of their coursework, and also if they have questions more relevant for their lecturer to resolve, that is always a successful combination, because students then can have their questions answered immediately."*
- **Co-teaching with a lecturer:** *"Team teaching with a lecturer, or having a lecturer present at the librarian's lecture - it's very valuable to me as it validates the librarian as the member of a teaching team, and students see me and what I teach as very much part of their coursework."*
- **Lecturer identifies lack of IL skills among his/her students and recommends IL content to be taught: "***We do this… because an academic actually asked us to do this for them…The lecturer said that we really need to cover it."*
- **Lecturer collaborates with Subject Librarian in preparing/designing the course and activities: "***There was a lecture where I had to talk to them about the drug information. And it didn't work particularly that well. With the second cohort coming through I kind of changed that a little bit, and also I had the lecturer there, which made the difference. Because the second time I had a bit more information about their course programme and I knew what they had to do for their assignments a bit earlier than that last time, so the last time the students could not see the relevance of my lecture to what they were doing, the second time I could emphasise that more clearly."*
- **Lecturer provides feedback after each IL session** on the effectiveness of the applied teaching methodology and suggests further adjustments to the IL class content/structure: "*I'd often go to*

them and ask: 'How do you think that went?' and discuss what could we do differently next time, and that process of working with them...I've got a particular social work lecturer and we've been teaching the same course for two or three years now and it's evolved so hugely, it's so different now after having conversations with her about where did we go wrong and what could we do better and how are we going to get students to do this next time."

- **Lecturer obtains feedback from his/her students** about the IL class they have attended and shares and discusses it with the Subject Librarian consequently: *"Lecturers also give us pretty good feedback, so they'll come and tell me if students commented that they really enjoyed my class, or what they've found useful. I actually like having a lecturer sit in, because that can really help me to shape not only the material that I am teaching, but also the way that I teach."*

10. Multiple activities performed during same session to reinforce comprehension of one idea, topic or information

Employing a combination of different types of activities within one session in order to reinforce one theme/idea was also commented on as an effective teaching method which proved successful in practice: "*And because students, if told once, they will forget that what you've told them, but if you have three - up to five activities about one thing you want to teach them, students will learn, will be able to learn."*

Research question III: What challenges SLs at the UoA encounter while employing the interactive, student-centered teaching and learning activities in their IL instruction sessions?

Challenges	Details
1. Lack of familiarity with an academic discipline/subject	Presenting a course-related IL session related to the academic subject/discipline librarian is not familiar with;
2. Database interfaces, content & design change unexpectedly	Librarian not aware of the change in relevant database before the class;
3. Performing & organizing an interactive activity in a lecture theatre	Attempting to engage students in large lecture theatres represents a disadvantage compared to classroom/computer training room conditions;
4. Variety of skill levels of students in the same class	1. International students with various backgrounds and skills/ 2. No individual student IL training track record available;
5. Time management	1. Managing the duration of an activity/2.Prioritising content delivery due to time limit/ 3.Lack of sufficient time for class preparation;
6. Ensuring the sufficient level of "difficulty" of an activity and providing sufficient depth of information presented	Zone of Proximal Development - ZPD (Vygotsky, 1978) & Problem-project space - CLEs (Jonassen, 1999);
7. Managing student behavior	1. Reluctance to participate/2.Monopolising/domineering behavior/3. Shyness/ 4.Unpredictable reactions of different student groups - positive and negative/5.Variable moods depending on the time of a day or semester;
8. One-shot session conditions	1. Inability to meet students repetitively and get to know them/2. Inability to build adequate CLE in a class /3. Time limitation;
9. Activity preparation	1. Preparing an activity or class based on another presenter's notes and teaching materials/ 2. Finding adequate examples and learning materials is time consuming (time challenged);
10. Repetitive teaching of the same/dry content	Due to repetitive teaching of the same/dry content, presenters face boredom;
11. Tiredness	After teaching a series of IL classes during the same day, the challenge is overcoming presenters' own tiredness during a late afternoon class.

1. Familiarity with a subject

Presenting a course-related or integrated IL session related to a subject or an academic discipline the presenter is not familiar with, represents one of the greatest challenges all nine Subject Librarians commented on. One of the numerous explanations is: *"If you don't know the subject area - that's really difficult. If a student says: 'Have you read that book, is it any good?' you can't say: 'No, I haven't, I don't know the subject, I haven't read the articles.' And that's where some of this material came from - evaluating things you don't know about. So - that's the most difficult thing - trying to*

present about the subject you don't know about." Another comment was: "*If you can talk back to students in the linguae that they understand, then they'll give you more respect and listen to you more after realising that you know very well what you're talking about."*

2. Database interfaces (and content) change unexpectedly

This is one of the challenges of IL teaching that every interviewed Subject Librarian fears the most - opening a database interface in a class and realizing at that very moment that it has changed in design, functionality and content, without any prior vendor's notification. Specific examples (articles, books, ebooks, chapters, book reviews, etc) are prepared in advance to be used as teaching/learning tools in IL classes. Due to the database interface change, the prepared teaching materials (anticipated search results to be found) immediately become unusable and Subject Librarians are forced to improvise complete IL session.

3. Performing/organizing an interactive activity in a lecture theatre

Attempting to engage students in large lecture theatres represents a challenge for IL presenters due to the lack of classroom/computer training room conditions and relatively large number of students involved. There are no hands-on PC stations available and students are reluctant to respond due to the large open plan space. To overcome this challenge, Subject Librarians at UoA use humour, controversial examples, questions and props (e.g. bringing in a presenter's own dog as a teaching tool). Some of the recommendations are:

- *"You can do a few things such as preparing a handout you can distribute during the class, you may involve doing a live demonstration, or you may prepare and find some interesting examples, so not like any old boring book title, but may find an author who's used an interesting title for their book."*

- *"It is definitely possible. You can do it by asking questions, and if you don't want to call people out to respond, you can do it by show of hands, like: 'How many of you have done this...?', you can bring those elements of humour in…"*

4. Variety of skill levels/pre-knowledge of students in a class

According to the data obtained during the interviews, the most common challenge all nine librarians encounter in their teaching is a disparity of skills and pre-knowledge among students in one class. The variety of skills discussed in the interviews refers to the following:

- International students from different countries also come with different levels of pre-knowledge including general knowledge, computer/IT skills, IL skills;
- There is no system or information channel in place at the University enabling Subject Librarians to track how many and which particular IL classes students have attended each year individually. For example, 3rd and 4th year students who have already attended a few IL tutorials, may end up completing a stage 2 paper and attend an IL tutorial designed for stage 2 students with basic IL skills.

Methods librarians apply at the UoA to overcome this challenge are: preparing an "extra for experts" (activity, discussion theme or content) in advance and peer teaching.

5. Time management

5a. Managing the duration of an activity

The exact duration of an activity in a class is almost unpredictable due to the unpredictability of students' response and behaviour, especially in the situation where students impose a series of questions, require additional clarification and/or are unable to complete the activity due to the lack of understanding. Practical solution employed by interviewed librarians is structuring the session and activities to allow additional time for answering questions and reinforced instruction (if

required). They said: *"The other thing is that you can't always, as much as you think that you can, plan timing. Things can happen in classes where, especially in big groups, you get delayed because you perhaps need to go over again things students aren't understanding, or you've got students at different levels, so sometimes you want to do something, but you run out of time."*

"What I came across was that I expected students will immediately understand what I wanted them to, and if they didn't, than I couldn't move forward."

"And if I find I don't have time in the end, I just skip the last part because the structure of my lesson is always like that - the most important part is at the beginning. At the last part usually there will be several random parts that can be skipped, yeah, and I think it is a really good idea to leave some of those unimportant themes at the end."

5b. Prioritising the content delivery due to time limitation

Short duration of one-shot session and inability to see students again impose a strong need for prioritising content covered and the type of activities applied. Five Subject Librarians highlighted the importance of prioritizing and the challenge of reducing the content taught, despite the demand for an in-depth IL instruction. For example: *"And then there's other things like sometimes you have the feeling that prioritising is essential. You think: 'Yes, it is good for them to know X, Y and Z, but actually, ABC is more important.' We could spend 10 minutes or 15 minutes on it, but it's more important to go over ABC."*

5c. Lack of sufficient time given (usually by lecturer) for class preparation

Finding interesting and controversial examples and teaching materials, as well as preparing interactive class activities and session structure is, according to interviewed librarians, time consuming. The lack of preparation time presents a stressful challenge for IL presenters. One of them commented: ***"****I wasn't given much time; I only had three or four days to prepare beforehand. We had*

a meeting on Wednesday morning, and only then I got to know what they want me to do. I asked them: 'When do you want me to have this tutorial...next week?', and they said: 'No, next Monday.' I only had two days to come up with the completely new course structure. So I was actually quite in a bit of a panic when I was preparing for this class..."

6. Ensuring the depth of information provided & sufficient level of "difficulty" (ZPD)

To judge the sufficient depth of content and the level of IL skills to teach represents a challenge for Subject Librarians due to the inability to get to know the students before the IL instruction takes place. "*Sometimes you wonder because you are teaching in this case - postgraduates, whether you are keeping things too simple...I believe in difficulty for its own sake, in dimensional complexity for its own sake, and I sometimes introduce activities which deliberately have got that extra one - two steps in it. You know, not just the basics, because they ARE postgraduates and may have already come across these things in life."* This comment highlights the necessity of creation of Vygotsky's (1978) Zone of Proximal Development (ZPD) within the IL instruction providing a sufficient level of 'difficulty' or cognitive challenge for students to be involved in, so that through that involvement the creation of new knowledge can be achieved. Jonassen (1999, p. 222) also shows that ***problem-project space*** is one of the five elements of CLEs, which "…present learners with interesting, relevant, engaging problem to solve or a project to conduct. In order for learners to be active, they must manipulate something and affect the environment in some way. The lessons that we understand the best are those in which we have been most involved and have invested the greatest amount of effort to resolve."

7. Student behavior/response during the activity

The unpredictability of students' responsiveness and behavior while taking part in an interactive class activity is another challenge Subject Librarians have reflected on. It appears that different groups of

students react differently to the same activity which, although completed with success in one class may prove ineffective with another group of students. The following issues have been discussed during the interviews:

7a. Students reluctant to participate - seeing an activity as irrelevant or just a repetition of other IL classes they have already attended and the skill/information they have already obtained.

7b. Domineering behavior of one student 'taking over the class' and monopolising the class discussion: *"It can lead the whole class astray and disrupt it. And I guess over the years I've learnt do deal with that, just by saying: 'I understand and I've great respect for what you're saying, but that's one way of doing it - here's another.' I think that's always the hardest part of our teaching roles - achieving the balance and happy union of two extremes and saying: 'That's really great and I really appreciate it - now let's hear what someone else has to say about it.'"*

7c. Students quiet and reluctant to respond openly in front of the class, feel uncomfortable to take part in an activity - common occurrence among first year students, for example, during the role-play and peer teaching activities. The interviewed librarians also recommend effective solutions to this challenge, based on their teaching experience:

- **Presenter taking up role of proactive mediator** and making the activity structure more flexible - taking the pressure off the reluctant/shy student: *"I'd cheer them up and make them laugh to lift their mood at the time to get them chatting. I try never to step in and answer the question myself. Otherwise I don't see the point of making that interactive."*

  "If we see that someone's struggling during the role-play activity, or they don't want to participate or they feel uncomfortable, that your job (as a mediator) is saying - ok, well Susy doesn't want to (well - you don't say 'don't want to - you try and make it sound more proactive, so then you say) - can anybody else help? - or - what does anybody else think? - or -

offer up suggestions that you may have and then say - what do you think about that suggestion? So, you try not to make it a negative experience, either."

- **Asking students to write their responses** instead of presenting them out loud: *"You may give them a piece of paper and just ask them to write their ideas and put the sheets up on the board, instead of reporting them back out loud. And it's also about giving them a permission to make mistakes and saying: ' Look, we don't expect you to know this stuff, anything you come up with - just write it up,' and emphasising that sense of - it's OK for you to participate, it's OK for you to make mistakes, it's OK for you to get it wrong."*
- **Creating safe learning environment***:"When you watch students while you're teaching and it's all about the computer and sitting behind the computer and listening to a person and they're all gobsmacked and they won't ask any questions because they're being given all this information and they're thinking:"I don't know whether I am wrong or I am right...", well if you put them in a situation where they're just in a wananga and are no barriers - and that's where the discussion happens and they do want to interact. "*
- **Taking students' attention off the activity and introducing anecdotal stories**: *"First year students do not know me and they do not know each other well, so these types of incidents are to be expected until they do start feeling a bit more relaxed and open to participate. That's why I feel it is important letting them know that we're all human and letting them see my own personality, so that in their eyes I am not just an automated persona talking in front of the class, so talking about anecdotal stuff helps them realise that I'm just a person like them, and also that they can bring up issues they are dealing with in their learning and that we can specifically deal with those."*

7d. Managing unpredictable reactions - students' behaviour during an activity depends a lot on the dynamics of the group itself. Dynamics of the group (in a class) is (pre)conditioned by the learning environment. "*Success of an activity is conditioned by the type of the student group in the class and the way group members relate to each other… Some of them talk quite a lot and it is easy to get answers out of them, in some groups it is painfully difficult to get answers to some of the questions, and I do not know if that's just due to different personalities of students...I do not know...As far as I can tell, I was doing the same thing each time, but some students were just more responsive than others. And I do not really know the answer to that. And it is a bit of a problem, because the whole session is structured around people doing the exercise and then reporting back their ideas."*

7e. Students' mood varies depending on the time of the day and semester, especially during the exam and assignment deadline period: "*Early mornings and late afternoons are the times when everything just drags out and students are slower than at other times of the day."*Another librarian explained:*" Sometimes students coming to a class may not be in a good mood or frame of mind to concentrate - it could be the time of the day when they have lots on, especially assignment due dates so they can get a bit distracted…"*

8. One- shot session conditions

8a. The inability to see students again during a semester causes a **necessity to cover a large portion of content** during one 50 minute long class: *"Yes - we cram in as much as possible in our class because we know we won't be able to see them again. And I know that they retain only 10% of what we teach them in the class. But the thing is that I still want to introduce them to databases, multidatabase search, and elements like Find full text link or whatever it's called now. There's a whole list of things we want to go through - not just the catalogue, and we come across this all the time..."*

8b. Lack of conditions for establishing adequate learning environment in a class - causes the inability to perform interactive activities conditioned by the learning environment, e.g. role-plays, peer teaching, games. Without enough time given to build/establish a 'community of trust' (including the relevant context), according to the activity theory, the activity itself has no meaning or effect (Jonassen, 1999). The first year students are particularly vulnerable if overexposed in such classroom environment: *"It is quite hard to ask people to come up and present, talk in front of the group, because you don't have that chance to build the community of trust and that's not such a big issue for postgraduates, but asking a first year student is actually really scary for some of them. Which is why we have opted for the group approach in the IL class, and it actually worked really well."*

9. Boredom

Due to repetitive teaching of the same content, presenters face boredom and are conscious of potential damage it can cause to the quality of their teaching: *"Repetition of the generic content in teaching is really challenging and boring for me as a presenter in a class."* Subject Librarians are continuously looking for ways to keep themselves enthused as presenter. Methods commonly applied are the theatrical teaching techniques: humour, 'pretending to be enthusiastic'- acting out particular mood, emotion.

10. Tiredness

After teaching a series of IL classes during the same day, the challenge is overcoming presenters' own tiredness during a late afternoon class. The challenge is to remain focused, retain presenters' own concentration level, and remain energetic and enthused: "*Once I've had a session on Friday afternoon at 4 o'clock after a really hard week, and I thought that I was not going to be able to do it…and I forced myself to be really enthusiastic, and then students got engaged and so you sort of feed of that buzz and it made me go on and continue and realize a really great session."*

12. Discussion

The literature review presented earlier in this report shows that there is a relatively consistent and an in-depth history of research into the IL teaching practices. In contrast, it is not often heard nor investigated what teachers have to say and how they accomplish both effective and engaging IL instruction. The results of this investigation into the work of experienced IL presenters offer numerous ways of interpreting and bringing their insights into the pedagogy of IL classroom instruction. The following section presents the summary and pragmatic interpretation of the gathered data which aims to contribute to the domain of IL research in New Zealand and overseas.

Research question 1: What particular student-centred, interactive teaching activities are practiced by Subject Librarians in a variety IL instruction sessions at the University of Auckland Library?

Despite numerous applied interactive teaching practices in the IL instruction at the UoA Library, it appears that the procedural scaffolding or 'how to' instruction is dominant, providing a guided instruction on system functions and tools, combined with elements of metacognitive and strategic scaffolding as described further in this section. The interactive class activities applied at the UoA Library range in duration from very short, five minutes long ones, to the entire one-hour long sessions structured in a form of specific activity. The identified activities support the **experiential learning** where the emphasis is on learning as a continuous process grounded in concrete experience as main trigger for higher-order learning circle (Kolb, 1984; Schunk, 2008). Five different types of applied activity structures are described during the nine conducted interviews:

- Simple, one-fold activity structure consisting of one specific task/action to be completed towards specific objective in a relatively short timeframe and may involve quiz or question/ answer model (Appendix 11, activity 2, 3, 10);

- Three-fold activity structure consisting of three separate and consecutive elements which may vary in duration, sequence and level of difficulty. This type of activity usually lasts (as reported by Subject Librarians) between 20-30 minutes (Appendix 11, activity 1, 7, 8);
- An activity structure embedded into a complete one-hour long IL session. The activity encompasses the timeframe of one whole class and may include, for example, an ice-breaker discussion at the beginning followed by an exploratory or role play type of an assigned task ending with a report-back discussion and the summary of findings (Appendix 11, activity 4, 11);
- A two-fold activity structure involving an engaging game-based action or a task to complete followed by the class discussion and the summary of the game results (Appendix 11, activity 5, 6);
- A two-fold activity structure involving an exploratory task and the jigsaw teaching/learning model followed by the report back/ peer teaching action. During this type of activities students are either split into smaller groups or asked to work in pairs (think-pair-share model) and given a worksheet to follow and fill-in. After completion of their exploratory tasks, representatives are asked to report/present the findings to the class (Appendix 11, activity 9, 10). This activity structure supports the **discovery learning method** which employs minimally guided problem-solving instructional approach in which students search, manipulate, explore and investigate. (Bruner, 1961).

Problem-based learning activities: hands-on activities, problem-solving activities, class discussion, question/answer model, group activities, quizzes, ice-breaker activities & games. Interestingly, only one surveyed IL presenter described the use of **an online quiz** in the IL classroom teaching, and twenty librarians indicated the practical application of quizzes in the hands-on form. **Quizzes** are

randomly applied at the beginning of IL classes to enhance students' engagement and interest for IL instruction, and at the very end to test their understanding of the introduced material. The interview data show that presenters place great significance on the level of 'difficulty' of problems assigned to students, and believe that the challenge and complexity of tasks enables the creation of knowledge. This process is defined by Vygotsky (1978) as the Zone of Proximal Development or ZPD. Activity theorists also believe that the lessons we understand the best are those in which we have invested the greatest amount of effort. Jonassen (1999, p. 218) says that: "The key to meaningful learning is ownership of the problem or learning goal, therefore presenter must provide interesting, relevant and engaging problems to solve." Judging, selecting and preparing an adequate level of content and IL skills to present in a class is one of the major challenges in IL teaching as discussed by Subject Librarians during the conducted interviews.

Class discussion has been described by all participants as an effective interactive teaching method students positively respond to. It has been applied frequently by all IL presenters and recognized as the functional method for building a "relationship with the individuals in the class and the librarian", but also for establishing a 'safe' and open learning environment in IL classes as it "also allows individuals to realise that they are not the only person needing help."Class discussion *"on how what has been learnt could be applied to study"* has been applied to enhance strategic scaffolding, as described by interviewed Subject Librarians. **Applied strategic scaffolding** is a surprising and unexpected finding of this research project and it has been considered in literature as one of the advanced forms of instruction which guide learners in ways to approach learning tasks or problems ('how to' learn or learn to learn) and support analysis, planning and strategy of open-ended learning.

Brainstorming has been described by interviewed librarians as method which proved unsuccessful in IL instruction. Librarians commented that students simply remained silent when prompted to

contribute to the activity and brainstorm a theme or problem being discussed. Their conclusion was that:"*It simply does not work."* The reason for students' reluctance to take part in brainstorming could be in the nature of the IL skills /content /theme /information taught in classroom setting. IL is not a frequent or popular topic explicitly present in everyday/popular culture and therefore students' understanding or the lack of it may impose a barrier to further negotiation. One Subject Librarian has found that brainstorming as an activity does not carry an evident structure or objective participants can foresee, and therefore do not have clear understanding of the purpose and their role in the brainstorming process.

Games, ice-breakers and discovery learning activities in which curricular content is linked to fun, game-like tasks/problems. Metacognitive scaffolding or guided instruction on how to approach and think about problems and themes being studied is dominant in these type of activities. Both survey and interview data confirm that online games are not practiced frequently in IL classes offered at the UoA, however hands-on, problem-based classroom games have been applied as favourite activities which promote incidental learning, as described by Bicknell-Holmes and Hoffman (2000, p. 316): "Incidental learning environments provide interesting, motivational contexts that make the presentation of dull topics more interesting."For example, Activity 5 (Appendix 11) is based on perhaps one of the most entertaining architecture to apply to teaching. An ice-breaker Activity 3 (Appendix 11) is also based on the game-like structure.

Ice-breakers are frequently applied short, five minute long activities at the beginning of IL classes to enhance students' interest in IL instruction, and create favourable class atmosphere and the 'community of trust' and open communication. However, ice-beakers may create several pitfalls when applied in practice; for example, they can take up too much class time unexpectedly, require

additional instruction and students may be reluctant to participate due to the lack of understanding of the purpose of an activity and its relevance to their studies.

Jigsaw model: involving problem-solving group activities and peer-teaching where students are asked to work in groups and contribute to one part of the problem (e.g. legal citation scrabble Activity 6, Appendix 11) and consequently present their solution to the rest of a class. Macklin (2001, p. 310) discusses the criteria for 'good' problems: they must be engaging, they have structure, are adaptable and collaborative. Requiring students to report back their 'solutions' to the tasks/problems given and articulate the reasons for their actions, according to activity theorists, supports knowledge construction. The interactive teaching activities applied in IL classes at UoA Library frequently carry the two-fold jigsaw structure and encourage the articulation of the learning process. Vygotsky (1978) promotes the idea that, on order to gain knowledge, learners must socially interact, comment and reflect on their individual, internal learning process.

Reciprocal teaching: peer teaching, students in the role of a presenter. Theatrical teaching: role plays. Peer teaching and role plays appear to be the most controversial types of interactive classroom activities which have been applied with great success by a relatively small percentage of Subject Librarians and avoided in IL teaching practice by the remaining members of the investigated sample group. Another surprising finding of this research project is that between 70% and 90% of surveyed participants have identified both peer teaching and role plays as 'ineffective' types of activities which do not 'work well' in practice without actually trailing them in their classes. The survey data has been investigated further and in-depth during the semi-structured interviews and Subject Librarians have been prompted to comment further on both types of activities. The findings are the following:

- Out of 30 survey respondents, TWO have actually trialed role play in their teaching with great success: one librarian has applied it in a class of 20+ postgraduate students and the second librarian has applied the role play activity in a training session for 20+ UoA staff members. Both librarians have highlighted the necessity of establishing safe and open learning environment (OLE) and the 'community of learners' in the classroom before the role play can take place. This confirms the activity theory postulate that without the relevant context, the activity itself has no meaning or effect. Librarians have also highlighted the relevance of the dynamics of a student group in the class for the successful completion of the role play; the necessity of an open communication/dialogue between participants and the preference of working with senior students (e.g. postgraduates) who are 'more confident' to take part in role plays.
- The interview data show that the remaining respondents who have classified role play as an ineffective activity which does 'not work' actually have not trialed it in practice due to the belief that the role plays are 'risky' and may expose shy, insecure and new students to an uncomfortable situation and cause the undesired effect of distress and reluctance to participate. The second reason for avoidance of the role play, as described by interviewees, is the lack of necessary conditions for establishing a 'community of trust' and 'safe' learning environment in IL class, as well as the lack of communication among students attending an one-shot IL session who may not know each other well. The lack of sufficient class time (role plays require minimum 20 to 30 minutes for completion) is the third reason for deliberate avoidance of role plays in IL teaching. One librarian commented: *"Role playing, that I'd never do in my class. I think you have to be a special kind of person to do a role play as it works for*

some people and not for others. I'd rather have students leave my class thinking 'Wow, that was great!' rather than 'Eww, she made us do this!'"

- Although only two survey respondents indicated that they have applied peer teaching or 'students in the role of a presenter' method, the interview data show that peer teaching is actually being applied frequently by Subject Librarians at the UoA. This type of activity is still viewed as potentially 'risky' for students who may find themselves unwillingly overexposed to an unfamiliar group of peers; however, it is also viewed as one of the favourable methods for managing the disparity of skill levels and pre-knowledge of students in the same class. We believe that the reason for this intriguing mismatch between the survey and interview data is caused by the way peer teaching activity is viewed by Subject Librarians - not as an activity used to enhance student-centred learning, but as a 'support' tool or method applied to overcome one of the biggest challenges in the IL teaching.

Resource-based, anchored instruction where students use a variety of resources to solve/discuss problems, such as online tutorials, websites, printed materials and video recordings. According to the survey data, online games and online quizzes are avoided by Subject Librarians, as well as the use of audio recordings and music in classes. The survey data also show that the use of PowerPoint slides, course handouts and activity worksheets are the most dominant types of information resources and teaching/learning materials applied in IL classes at the UoA Library.

Activities intentionally designed and applied to accommodate cultural milieu and needs of specific student group

The "*field sensitive"* learning style model refers to the learning behaviours resulting from cultural predispositions, such as bicognitive and bicultural. The *"field sensitive"* students, described by Ramirez & Castaneda (1974, as cited in De Bello, 1990, p. 210), are the ones sensitive to a social

environment, but less comfortable with traditional classroom spatial, as well as teaching and learning models. According to the activity theory, the activity structure defines the way learners in the collaborative learning environment manipulate simulated object/information/ learning material. One of such unique activity structures is represented in Activity 11 (Appendix 11) where the IL instruction is placed into carefully selected and staged learning environment to evoke and enable the emotional connection (internalization of new content - knowledge creation) with an introduced IL skill or theme and acceptance of the presented *problem - project space*. Jonassen (1999, p. 222) points out that: "Students cannot assume any ownership of the problem unless they know that they can affect the problem situation in a meaningful way…" The interviewed Subject Librarian, who has created and applied with great success Activity 11, has also defined its cultural context: "*When you wananga in the old days, we've had the wananga in the middle of the night. Pure darkness, there was no electricity in those days. Even nowadays people are recreating to that situation by sitting amongst the forest at night - so that's your whare. And what it really is - you listen to someone and because you cannot hear anything else [you can hear the crickets chirping away] - but all you can hear is actually the korero, you don't close your eyes - you keep your eyes open and it's like your eyes and your ears are the pen and the paper. And you can't see anything else, you've got no distractions. And that's what's so good about the whole whananga and the discussion thing is that there are no distractions from any other item and any other resource you could be playing around with. And that's what I'm talking about as ka tuhi I to rae - as - it writes into the memory. So, we address 5 main elements of whananga - how you receive the information, how you disseminate information or how you actually bring the information back out there and how you look after the information…"*

One of the strong characteristics of the interactive classroom activities applied in the IL instruction at the University of Auckland is consistently and well-defined context and social roles that surround the

activity. Another example is Activity 7 (Appendix 11) consisting of three different parts reinforcing the same skill. Each of the elements of Activity 7 is well contextualized and defined within the discourse of the related academic discipline and where printed learning materials are provided to support the metacogntivive scaffolding (e.g. how to approach the problem given and which methods/steps to apply to solve it).

Why are these types of activities recommended by Subject Librarians at the UoA as the effective ones and frequently applied as the most favourable?

According to the survey responses and interview comments, Subject Librarians at the UoA utilise the following methods to evaluate the effectiveness of interactive teaching methods and activities applied in their classes:

- Feedback collected from students' evaluation forms (print and online), especially comments related to specific activities completed during an evaluated session;
- Participant observation of students' response and behavior during an activity;
- Evaluation feedback received from the lecturer who observed the class;
- Individual follow up with students in the form of an informal consultation or conversation;
- Formative assessment involving a pretest and a posttest at the start and end of a semester applied in integrated IL classes;
- Formative assessment during a class involving an additional activity/exercise to test comprehension;
- Analysis of the quality of students' references in submitted assignments and coursework.

Research question 2: Which are the most effective interactive teaching practices employed by Subject Librarians in IL instruction at the University of Auckland?

Theatrical teaching techniques: involving humour, body language, tone of voice, dress code, movement and presenter in a role of an actor on a classroom stage. The surprising finding of this research project is the awareness among IL presenters of the similarity between their teaching roles and the role of a performer on a 'classroom' stage. This comparison has been reinforced during the semi-structured interviews by the researcher due to her familiarity of the representation of this theme in the library literature (mainly produced overseas); however, the interview responses proved fruitful and rich in examples of practical applications of theatrical teaching techniques at the University of Auckland Library in New Zealand. This teaching technique is not only applied as an instructional support method during the role-play type of activities, but also Subject Librarians use it to 'act out' and convey particular emotion, mood or feeling, and even to overcome challenges in their teaching, such as tiredness, monotony of repetitive teaching of the same content and the 'dryness' of the presented content. They also see themselves as actors on a stage and this notion seems to be strong enough for one interviewed librarian to conclude that *"if one does not have an ability to 'act' - then one does not have an innate ability to teach"*. According to activity theorists, one of the instructional support methods essential for establishing a successful CLEs is modeling, or model performance where presenter demonstrates or 'acts out' an action, and then asks students to follow the model and complete the activity. Subject Librarians at the University of Auckland Library intensively apply model performance and utilise the theatrical teaching technique to achieve this type of instructional support.

Collaborative teaching or co-teaching is also one of the favourite and effective teaching methods applied at the UoA Library. This particular interactive teaching method has unexpectedly emerged

during this research as highly effective and practiced by several Subject Librarians in course-related IL instruction as it allows presenters to create an 'open dialogue' type of class discussion, an appealing collaborative learning environment with elements of humour and without set boundaries, inviting students to freely take part and join the dialogue between two presenters. Vygotsky (1978) argues that the learning process occurs on a social level through interactions with others and on the psychological level (an internalization of meaning into knowledge). Co-teaching classroom situation enables exactly that and invites students to openly communicate and share their viewpoints and thoughts in order to internalize new information/theme so that the creation of knowledge can occur.

"Extra for experts" effective teaching method is applied by a majority of IL presenters at UoA, involving an additional session planning and preparation of advanced content or an activity to be applied in classes with a disparity of skills levels and pre-knowledge among students. This teaching method appears to be the librarians' "secret tool", a remedy for one of the most frequent challenges in IL instruction. It also appears that the most experienced IL presenters regularly prepare "extra for experts" activity or content without the intention to apply it unless the need arises.

Highlighting the relevancy of activities to students' coursework, assignments and real life experiences is recommended by interviewed librarians as one of the unavoidable and the most effective teaching practices regularly applied. Without understanding the usefulness or outcome of interactive class activities ('why are we doing this?'), students are reluctant to pay attention, take part and contribute. Bruce, Edwards and Lupton (2006) define Six Frames for Information Literacy education, where the Personal Relevance Frame for IL education promotes learning as a pathway to finding personal relevance and meaning and helps learners understand what IL can do for them ('what good is IL to me?'). One of the questions activity theorists ask is: *What needs to be done so that learners are able to fully understand the social roles and cultural context that surround the*

activity? Subject Librarians at the UoA Library intuitively and based on their teaching experience understand the necessity to determine the activity contexts which support intrinsic motivation in learners.

Flexible structure of an activity/interactive element performed in a class - it appears that one of the challenges of the delivery of an one-shot IL session is the time limitation and strict time management which is brought into the spotlight in the situations where an additional instruction or time spent on answering students' questions of an unexpected scope are required. IL content or theme a presenter considers straightforward and easy to understand may actually be difficult and confusing for students to comprehend and take up unplanned class time. To remedy such situation, experienced IL presenters at UoA Library recommend flexible structure of IL classes and the preparation of activities to allow an 'extra' time where the most relevant themes/content/skills are covered in the first part of the session, or the first activity given to students, and the second half of the session is structured to cover a 'non-essential' themes or activities which, if the need arises, may be reduced, skipped or recommended as interesting topics for homework and self-study.

Use of interesting, funny, controversial examples has already been presented and discussed in this report (*see* page **50).** Subject Librarians at the UoA Library have concluded that the use of interesting examples, such as controversial printed materials, physical objects, unconventional themes, appealing graphics and images, even bringing animals in the class from home (e.g. presenter's dog), can enhance students' attention and engagement on a cognitive level, so that performing an additional class activity may become unnecessary. Without intriguing, relevant and real-life examples and the freedom to introduce such examples into their IL class instruction, participants in this research project find that interactive class activities may not be as successful as anticipated, regardless of the amount of time and effort invested into class preparation. Jonassen (1999, p. 225)

concludes that: “Learners need information which enables them to construct their mental models and formulate hypotheses that drive the manipulation of the problem space.”

Collaboration with lecturer is recommended by a majority of the interviewed librarians, unsurprisingly, as the most effective one. The following models of collaboration between UoA librarians and lecturers have been identified (*see* pp. **50-51** of this report):

- Lecturer present/sits in the IL class;
- Co-teaching with a lecturer;
- Lecturer identifies lack of IL skills among his/her students and recommends IL content to be taught;
- Lecturer collaborates with Subject Librarian in preparing/designing the session and class activities;
- Lecturer provides feedback after each IL session on the effectiveness of the applied teaching methodology and suggests further adjustments to the IL class content and structure/lecturer obtains feedback from his/her students about the IL class they have attended and shares and discusses it with Subject Librarian consequently.

Due to the factors preventing Subject Librarians to get to know students attending one-shot IL session, build a rapport with them, maintain a continuous and ongoing communication and meet with them consequently and repetitively after the IL instruction session (exceptions are rare), IL presenters at the UoA Library are aware that the collaboration with lecturers may compensate at least some of these drawbacks. Lecturers, course coordinators and tutors are privileged to know their students well and have multiple opportunities to build an open communication and professional relationship with them and obtain direct and much more open feedback from students related to the IL classes they have attended. Lecturers can also make valid recommendations

regarding the content, structure and the activity types applied in the IL classes, based on their knowledge and understanding of their students' needs and skills levels. The interviewed Subject Librarians also highlighted that having a lecturer present in the IL session as an observer, or, even better, as a co-teacher, adds greater value and significance to the IL instruction from a students' perspective.

Combining different types of activities during one class to reinforce comprehension of one idea or theme - it is interesting that none of the interviewees have discussed the importance of accommodating different learning styles of students. However, employing a variety of types of activities during one session has been described frequently as a favourable practice. ALA (2006) promotes a dynamic and diverse approach to teaching and learning, which incorporates a variety of teaching techniques in response to the varied learning styles of the new student generation. Four essential types of learners have been identified in the library literature (Kolb, 1984): **the diverger** (learner's preference is toward concrete experience; displays the strong need to know the reason for learning), **the assimilator** (learner's preference is toward abstract conceptualization; displays the strong need to know what pieces of the puzzle they need to assimilate in order to learn a concept), **the converger** (learner's preference is toward reflective observation; displays the strong need to act pragmatically and wants to find out how things work) and **the accommodator** (learner's preference is toward active experimentation; displays tendency to be highly creative and to experiment in order to solve problems). Fleming (2001) further differentiates Kolb's types of learners into: Visual, Auditory, Read/write and Kinaesthetic (VARK model). Although it has been acknowledged in the library literature that it is difficult to address different learning styles during one IL session (Dalrymple, 2002, p. 271; Julien, 1998, p. 308), Subject Librarians at the UoA Library are aware of the importance of employing a variety of interactive teaching methods and are successful in performing multiple

activities in one session in order to enable students to engage with new themes and skills in a variety of formats and methods.

Research question 3: What challenges Subject Librarians at the University of Auckland Library encounter while employing the interactive, student-centered teaching and learning activities in their IL instruction sessions?

Apart from the challenges which have already been recognised in the library literature, such as one-shot session conditions (the inability to meet students repetitively & lack of time for establishing adequate learning environment), time management (controlling the duration of an activity, prioritizing content delivery due to time limits, lack of sufficient time for class preparation), variety of skills levels among students in the same class, as well as performing and organising student-centred activities in a lecture theatre environment; additional challenges have been identified during this research project:

Lack of familiarity with an academic discipline/subject - presenting about the topic IL presenter is not familiar with is not a common situation, but Subject Librarians have commented that they do find themselves in occasionally. They conclude that being familiar with the subject while delivering a course-related IL session and employing academic discourse students are accustomed to, enables Subject Librarians to engage students' attention and build the rapport with them more efficiently. In her award winning article, Michelle Holschuh Simmons (2005, p. 297)) argues that "academic librarians can learn the characteristics of the academic disciplines and then help students learn these characteristics…Librarians can facilitate students' transitions into the cultures of their chosen disciplines. In this way, we can help students see that information is constructed and contested not monolithic and apolitical." Simmons (ibid, p. 308) strongly believes that academic librarians are ideally positioned to become truly liaisons or mediators for disciplinary practices between students

and faculty members by employing the genre theory through critical IL in their work with undergraduates learning the discursive practices of a chosen discipline. James Elmborg (2006) and critical IL theorists also promote the importance and necessity for practicing IL student-centred teaching methods not only within the context of library literacy, but within the global paradigm of multiliteracies (context). Critical IL theorists point out that literacy pedagogy cannot be approached as formalized, monolingual and mono-cultural phenomenon.

Engaging the academic discipline discourse in IL instruction at tertiary level has emerged during this investigation as the required and effective teaching practice.

Database interfaces, content & design change unexpectedly - is one of challenges most interviewees fear the most. It is an occurrence which cannot be controlled by librarians and may jeopardise the delivery of an entire IL session, regardless of the amount of time and effort invested into its preparation.

Ensuring the sufficient level of "difficulty" of an activity and providing adequate depth of information presented. Defining the Competency Frame for IL education ('what should learners be able to do and at what level of competence?') and the Content Frame ('what should learners know about the subject and IL?')(Bruce, Edwards and Lupton, 2006, p. 4) represents a challenge for interviewed IL presenters. The findings of this project show that, surprisingly, Subject Librarians are not concerned with the controversy between content vs. interactivity already highlighted in the library literature as one of the crucial challenges in IL teaching. During the conducted interviews, librarians have commented that they generally never had to compromise content taught in order to introduce and accomplish the student-centred, interactive activities. Moreover, they have pointed out that, by structuring IL sessions as open, constructivist learning environments, they have been able to introduce advanced content and additional themes. Instead, librarians at UoA have found

that the actual challenge is the lack of conditions enabling them to judge the sufficient level/depth of content and the level of 'difficulty' of IL skills to be introduced in IL classes. Since Subject Librarians do not have the opportunity to get to know students and their IL needs and skills requirements before the IL scheduled class, judging the level of instruction to deliver represents a major issue. The collaboration with a lecturer in preparing the IL instruction has been described as one of the effective solutions, but in situations where lecturer's support and time are not available, librarians have no other option but to rely on their own uninformed presumption and judgment.

Managing unexpected student behavior involving students' reluctance to participate during an activity, domineering behavior of a student 'taking over the class', shyness and quietness of new students and varied moods dependent on the time of the day and semester. However, the unexpected dynamics of different student groups appears to be the biggest challenge as it conditions the success of an activity. Four Subject Librarians have commented that a proven successful activity completed in a class of highly engaged and responsive students may 'fall through' when applied in another class containing completely different group of students. The librarians have described that they have performed the same activity in exactly the same manner as earlier; however, different dynamics of new group of students attending the same IL class caused the completely different and undesired activity outcome. Interviewed Subject Librarians at the UoA Library believe that the dynamics of different groups of students cannot be greatly influenced by IL presenters during an one-shot IL session and therefore evaluate the activities based on their effectiveness within at least three to four different classes. One librarian commented: *"If activity falls flat three times out of four, it means that it is not effective and I will stop practicing it in my classes."*

Subject Librarians at the UoA place great importance into the **activity preparation** and invest significant amount of time and effort in finding adequate examples and creating learning materials.

Problem-solving types of activities are the most frequently applied in IL teaching at the UoA Library. Therefore, presenters require sufficient preparation time for creation of adequate problems and tasks for students to complete/solve during individual activities. Activity theorists find that without ownership of the problem, learners are less motivated to solve or resolve it. Ill - structured problems are identified as the ones which have unstated goals and constraints, possess multiple solutions, solution paths or no solutions at all, present uncertainty about which concepts, rules, and principles are necessary for the solution, offer no general rules or principles for describing or predicting the outcome of most cases, require learners to make judgments about the problem and to defend their judgments by expressing personal opinions or beliefs (Jonassen, 1999, p. 219). Nearly every conception of constructivist learning recommends engaging learners in solving authentic problems related to specific real-world tasks, therefore, the lack of sufficient class preparation time puts a great amount of pressure on IL presenters who are aware that without adequate problems, examples, teaching tools and materials, interactivity is difficult if not impossible to achieve.

Repetitive teaching of the same/dry content and presenter's tiredness have not been frequently discussed in the library literature and are the challenges five Subject Librarians have commented on. IL presenters do not only feel the responsibility to engage their students, but themselves as well. Losing one's enthusiasm and focused concentration for the material and themes being presented may negatively impact every single IL session taught and the majority of experienced IL presenters seem to be aware of it. The techniques applied to 'act out' enthusiasm and evoke it in students at the same time are humour, theatrical methods, use of controversial examples and interesting teaching and learning materials. It has already been discussed in the literature review section of this report that the presenter's performance carries the key influence on the way students (audience) experience, both emotionally and cognitively, every IL instruction session attended.

13. Conclusion

Regardless of how well librarians structure and design their sessions and regardless of the type of the IL instruction created, the investigation into the IL teaching practices shows that it is crucial that, as educators and professionals, librarians invest creativity into their Information Literacy teaching (Julien, 1998; De Bello, 1990; Manuel, 2002; Walter, 2008; Koufogiannakis & Wiebe, 2006, Kolb & Kolb, 2009). Sessions need to be planned, structured and executed as dynamic constructivist and collaborative learning environments accommodating relevant learning contexts, as well as interactive, student-centred and engaging components. The findings of this research project confirm that the lack of conditions (time, one-off class) for establishing an adequate learning environment in IL instruction influences the selection of the type of interactive activity applied. The findings also indicate that the type of activity performed in practice depends on the personality of a presenter (e.g. introvert vs extrovert) and his/hers teaching experience (e.g. the greater teaching experience - more freedom to experiment and try new activities and teaching methods). This project shows that there is good will and enthusiasm among IL presenters and library professionals in New Zealand towards sharing their teaching experiences, challenges and successful practices. The complexity and number of the challenges related to the interactive IL teaching methods, which have been identified during this investigation, is significant and IL presenters, who have generously contributed to this project, have expressed the strong belief that sharing their teaching experiences, both positive and negative, with other IL presenters and an open discussion about the instructional challenges they all face are the most effective professional development and peer support practices. The value of this project has been in identifying both challenges and the effective student-centred teaching methods applied, so that they can be shared with other IL presenters, adopted and practiced further to enhance the quality of IL classroom instruction, both in New Zealand and internationally.

14. Recommendations

Based on the findings of this project, the following recommendations are made which could provide effective support for IL presenters to overcome the challenges they face while organising and delivering IL classes and interactive teaching practices:

1. **Develop an online IL session management system or an internal database** enabling Subject Librarians to track down individual student's history of IL instruction received to date, so that librarians can:

- Prepare their forthcoming IL classes based on that information;
- Plan in advance and establish methods for creation of constructivist learning environments;
- Establish adequate level of IL skills and content taught (so that ZPD can be realised);
- Prepare teaching materials to accommodate a variety of IL skills levels in a class (and also ensure the *problem-project space* element of CLE) *;*
- Select the most suitable type of interactive activities students attending IL classes will be interested to contribute to and take part in;
- Utilise online social networking applications (e.g. Meebo) to establish and maintain continuous and open communication with students attending IL classes, assess their existing IL skills and needs prior to IL session, follow up on the progress of students' learning and IL skills retention and investigate their preferable learning styles and habits (e.g. preferable types of activities to employ, examples and learning materials).

2. **Create an open access repository** for collection and preservation of IL teaching and learning materials from all New Zealand tertiary libraries, so that IL teaching experiences, examples and tools can be shared at the national level among tertiary library professionals involved in IL

teaching and training. The repository would enable further investigation into the history and evolution of IL instruction in New Zealand.

15. Directions for further research

The scope of this research project does not allow broad generalizations and therefore a further investigation into the interactive teaching practices applied in IL classes offered at other New Zealand tertiary libraries would be a natural progression. The following themes have been identified during this project as the ones which require further attention:

- An investigation into the learning environments as socio-cultural frameworks for enhanced students' interaction and participation, enabling emotional connection with content/skill/action and enhancing the intrinsic motivation towards learning;
- An investigation into the effectiveness of individual classroom activities based on the retention of knowledge and application of IL skills;
- Further research into the effectiveness of IL classroom instruction in relation to the number of IL sessions offered each year per tertiary institution. Are there enough IL classes offered to enable sufficient quality of IL teaching, knowledge retention and student engagement?
- An investigation of the correlation between the librarians' teaching experience (or the lack of it) and the teaching methods applied in IL instruction in New Zealand tertiary libraries;
- An investigation into the application of scaffolding teaching methods in IL classes in New Zealand tertiary libraries, and especially an analysis of the conditions affecting the dominance of procedural scaffolding versus the conceptual, metacognitive and strategic scaffolding teaching techniques.

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APPENDIX 1: Participant Information Sheet - Interviews

SCHOOL OF INFORMATION MANAGEMENT

Participant Information Sheet

Dear Participant,

My name is Neda Zdravkovic, and I am studying towards my Masters in Library and Information Studies at Victoria University of Wellington.

For my final assessment, I am required to carry out research on an aspect of the library sector. The objectives of the research I am conducting are to identify teaching and learning activities currently applied in the Information Literacy classes at the University of Auckland Library and to investigate the challenges library presenters encounter while employing these activities in practice.

Participating in the research will take no more than 45 minutes, and will involve an interview. Interviews will be recorded using a digital voice recorder and transcribed. Access to the recordings and transcripts will be restricted to my supervisor and me only. The data will be kept confidential, and destroyed one year after the completion of the project. You will not be identified by name in any part of the final report and it will not be possible for you to be identified personally.

Should you wish to pull out of the research after completing the interview, you may do so within two weeks of the interview date, without giving a reason. If you are interested in the results of the research, I am happy to provide you with a summary of these.

This research will be written up in the form of a report. A copy of the final report will be submitted for marking to the School of Information Management and deposited in the VUW library, and also online in the VUW institutional repository. It may also be submitted for publication in academic journals or presented at a conference.

If you have any questions or concerns, please feel free to contact myself, or my supervisor. Details are provided at the end of this sheet.

Thank you for your time and interest in participating in this project! It would not be possible without you.

Neda Zdravkovic
Masters Student (Masters in Library and Information Studies)
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APPENDIX 2: Participant Information Sheet - Survey

SCHOOL OF INFORMATION MANAGEMENT

Participant Information Sheet

Dear Participant,

My name is Neda Zdravkovic, and I am studying towards my Masters in Library and Information Studies at Victoria University of Wellington. The objectives of the research I am conducting are to identify teaching and learning activities currently applied in the Information Literacy classes at the University of Auckland Library and to investigate the challenges library presenters encounter while employing these activities in practice.

Participation in this research is voluntary and anonymous and it will take no more than 10 minutes. It involves a survey consisting of six set questions. Survey questions are made available to you via the online survey software *SurveyMonkey* (http://www.surveymonkey.com/) and emailed to your work email address by your employer.

Your consent to participate in this research project is given by completing and submitting the questionnaire. All survey responses are anonymous and it will not be possible for you to be identified personally. Any individual responses to the survey questions will not be identifiable. You have the right to decline to answer any particular question.

Access to the data you provide in the survey will be restricted to my supervisor and me only. The data will be destroyed one year after the completion of the project. You will not be identified by name in any part of the survey and in the final report. If you are interested in the results of the research, I am happy to provide you with a summary of these. At the end of the survey, a link is provided which you can use to email me if you would like to be sent a copy of the summary of findings.

This research will be written up in the form of a report. A copy of the final report will be submitted for marking to the School of Information Management and deposited in the VUW library, and also online in the VUW institutional repository. It may also be submitted for publication in academic journals or presented at a conference.

If you have any questions or concerns, please feel free to contact myself, or my supervisor. Thank you for your time and interest in participating in this project! It would not be possible without you.

Neda Zdravkovic

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APPENDIX 3: Participant Consent Form - Interviews

SCHOOL OF INFORMATION MANAGEMENT

Participant Consent Form

Title of project:

An investigation into the interactive teaching practices of librarians in Information Literacy (IL) instruction at the University of Auckland Library

I, _____, have read and understood the enclosed participant information sheet, and give my consent to be involved in this project.

I have had an opportunity to ask questions and have them answered to my satisfaction and I understand that:

- I will not be identified by name in the final report
- My interview recording and transcript will be confidential to the research team
- No opinions will be attributed to me in any way that will identify me
- My interview recording and transcript will be kept confidential for one year from the end of the project and then destroyed
- I may request a summary of the findings of this research
- I may request to view copy of my interview transcript within two weeks of the interview date
- The data I provide will not be used for any other purpose or released to others without my written consent

11. I may withdraw from the project, without giving a reason, at any time up until two weeks after the interview date and any data I have provided will be returned to me or destroyed according to my instructions

☐ Yes, please contact me with a summary of the research findings

☐ Yes, I wish to see a copy of my interview transcript

Signed_____

Date_____

Please write your contact details below if you wish to receive a summary of the research findings and/or a copy of your interview transcript.

_____

APPENDIX 4: Survey questions

SCHOOL OF INFORMATION MANAGEMENT

Survey questions

1. How long have you been teaching Information Literacy (IL) classes?

   Less than one year

   1-5 years

   More than 5 years

2. How many IL classes do you approximately teach per year?

   1-10

   10-30

   30-50

   50-70

   70-100

3. What particular methods do you apply in your IL classes to get students interested in the topic and become actively engaged? Please select relevant statements, or add your own:

	Never	Rarely	Sometimes	Often	Regularly
I apply group activities					
I apply problem-solving activities					
I apply hands-on activities					
I facilitate class discussion					
I use question/answer method					
I use quizzes in my classes					
I apply games in my classes					
Students in my class work in pairs					
I apply ice-breaker activities at the beginning of my classes					

I organise role-play activities in my IL classes
I use humour in my teaching
Students are given the role of a presenter in my classes
None
Other_____

4. What types of teaching resources and materials do you use in your IL classes? Please select relevant statements, or add your own:

	Never	Rarely	Sometimes	Often	Regularly
I use videos in my classes					
I utilise online tutorials in my IL instruction					
I play audio recordings in my classes					
I use PowerPoint slides in my IL sessions					
Students are given handouts in my classes					
Students are given the activity worksheets in my classes					
Students are given online quizzes to complete in my class					
Students are given online games to complete in my class					
None					
Other_____					

5. What types of class activities work really well when applied in your IL teaching and which ones do not? Please select relevant options, or add your own:

	Do not work well	Rarely	Sometimes	Always
Group activities				
Problem-solving activities				
Hands-on activities				
Class discussion				
Question/answer method				

Quizzes

Games

Ice-breaker activities

Role-play activities

Students in the role of a presenter

Other_____

Other_____

Other_____

6. Please describe your favourite classroom activity and briefly explain why it worked well in your teaching:

Thank you!

APPENDIX 5: Interview questions

SCHOOL OF INFORMATION MANAGEMENT

Interview questions

1. Please describe some examples of the classroom activities you have applied in your Information Literacy (IL) teaching to date.

2. Did these activities work well in your class? If yes, why?

3. Can you describe some of the class activities that you have employed or tried to employ in practice but found challenging to realise during the IL session? Please explain why they did not work well.

4. Based on your teaching experience, do you believe that the class activities you have applied in IL teaching have influenced students' engagement during your sessions and the quality of their learning?

5. In the process of preparing and delivering teaching activities in your IL classes, are there any challenges you have encountered? Please describe the nature of the challenges you have been dealing with as a presenter.

6. What are the factors, if any, which may influence your decision not to apply class activities in your IL session?

APPENDIX 6: Sample Transcript

Interview with a Subject Librarian, held on Thursday, 24th September 2010, 10-11am, at The University of Auckland Library

L 6 = Librarian; R = Researcher

L: I want to talk about these activities that I have set up for Anthro 201. This is actually the larger tutorial at the request of a lecturer and this is the first time that I have done this kind of tutorial and I really want to show you...I was in a bit of a panic when the lecturer requested this kind of tutorial. She said that she wanted me to show the students the differences between the primary and secondary sources and how specifically to find peer - reviewed journal articles.
So the second part is actually our routine work, you know, but the first part, how to distinguish between primary and secondary sources - I never taught that one before, and also the lecturer's request is not just letting the students know the differences, because they have already done that in the lecture many, many times, but over the years they've found that students are unable to find primary resources and distinguish them from secondary sources. So, I had to think of some activities, and that's what I had in mind at that time, so...You know, when I was given the task, what I had in mind was what I've been taught when I did the teaching diploma and I remember really clearly - and this was a big emphasis - when we were asked to teach one thing, we cannot expect, I mean, this is what teachers have told me, we cannot expect the students to know and learn immediately, and we need to have at least three activities to reinforce what we aim to teach them. And because students, if told once, they will forget that what you've told them, but if you have three (what the teacher said) - up to five activities about one thing, one thing you want to teach them, students will learn, will be able to learn what you want to teach them. So this is what I had in mind, so when I decided to teach this, I had two activities, and, of course, before I started to teach these activities I had prepared a PowerPoint and explained to them the differences, and because this course is for Anthropology, I need to focus on anthropology materials, because each discipline is sort of different, so I have a PowerPoint up and explain them the differences - then I ask them if they have any questions - nobody has questions, because, you know, the definition of each of them seem very simple and straightforward, so if you ask them, they have no questions because they think: "Oh, that's easy!", but when they are asked to do the task, that'll be the different thing.
So, then I start to explain to them that there are often blurred boundaries between the two it's often really difficult to distinguish. And, so, what I am going to do now, I am going to have two activities with you and see whether you are really able to grab the differences.
So, these are the two activities. In activity one, I give them a list of items (so you can have a look there, in the handout it's on page two), I say - "I give you two or three minutes and then each of you will have to write out against each item - what do you think about these resource, is it primary or is it secondary and write it down." This is a very much a personal activity, each student has to do it individually, and so they write it down and afterwards I ask them to contribute their answers. This is a very good way to engage them, everybody has to do the task and everybody has to contribute their answers. So I ask them to take turns to tell me their answers. And as you can see, there are eleven items, however, when I go through and for each answer I ask for their class feedback, say, if somebody says "this is primary", and I ask for their feedback "So - do you agree?" and on most of the items they agree; for some - they don't. So it's a good way to engage a student, because they are responding not to me, but to their classmates. And because each one of them has put their answers down (in the handout), if their answer is different, they'd be happy to say. Each student will have their own point of view and explain why they think it's a primary or secondary, and then I will, of course, listen to them and explain how I would look at the resource.
And then, I am very fortunate because the tutor, well, have attended each of these sessions, I think four or three - I cannot remember - about four sessions, because there are a lot of students and the tutor has attended each of them and it's really good, and each time when I say "This is my answer", I ask the tutor for confirmation.
You know sometimes, the librarian, to a student, librarian sometimes does not carry that authoritative voice, but if I have a tutor to correspond to what I've said, the effect is much, much bigger. So, this is the sort of strategy how I apply to try to engage students and at the same time try to impose my point of view on them and convince them.
And then, during the first activity, I also prepared some other, um, sort of like extended materials, sort of tombstone examples as primary source. Tombstones are very important to anthropology students, you know, they may not be so important in other disciplines, so I already prepared some, sort of, extended possibilities. I say: "How about tombstones that have someone's biography on them? Biographies are, of course, written by somebody else..." and then, it gives them

opportunity to further their thoughts about it, and because this is something all of them are already individually engaged in, they are happy to respond, to think about all the other possibilities.
They did enjoy this first activity, because it's not difficult to them at all and they do like the discussion part a lot. So, this is a first part, and then in the second activity, I continue with the differences between primary and secondary sources. So, in the second activity I gave them this one...this handout...What I wanted them to do is - I gave them the two articles, but not the full text, I only gave them the first page and the last page of each of the articles. Of course, I had to do a bit of research myself. Now, this topic is about human evolution and students had to do the research about the primary sources and about the theory of evolution of bipedalism and also to find secondary sources - I think six secondary sources. So, I did some research and I did find some primary resources for the theory and I've found secondary sources for the theory. I did not let students know, I'd just say: "Here are two articles. Can you, please, um, read just the abstract, the introduction, and also go to the conclusion part. Do not read the rest - there's not enough time for them, so...And then I wanted to pair them for the discussion. I'd say: "Please find another person to discuss with you and decide in your pair which one is a primary resource and which one is a secondary resource."
What I have in mind again is - this is actually exactly something they have to do, you know, it's not just something like explaining the differences, for now they really need to find out whether they really know the differences or not. This is something like a real life situation; they really have to decide now between the two articles - which one is a primary, which one is a secondary. Also - this one is also embedded into the activity: I did not explain to them that, in order to evaluate the article, you can not just read the title, you have to go to the abstract and of course - the introduction. I mean, to be able to evaluate [an article] you need to at least go to the conclusion as well [if you are not reading the full article]. So this is kind of, sort of a strategy to evaluate information resources which I did not explain, but it is embedded into the activity. And this is something they need to do in order to identify the primary and secondary sources that are relevant. And so, I gave them 5 minutes, in some classes they need more than 5 minutes, so I give them between 5 to 9 minutes. As a teacher, you can tell that they are still reading, that they haven't started talking yet, and that they still need more time. So, this is, I mean, personally, this is a well structured activity, so I am able to make it very flexible and wait until students are ready to discuss and then, when I notice that....You know, it's very funny - the dynamics of each group - it's very different. Sometimes students do not need the teacher to help them - if they are a very interactive group, if they know each other very well, they will start discussing quickly and I also had a group that finished reading and then just looked at each other without talking to the person to the right or the left from them. I just keep watching them and I feel in a very good position to direct them as to what to do next. After I notice that they have finished reading. So I say: "Can you, now, each of you, get a person on your right hand side, or on your left hand side, and start to discuss..." And then they will start to discuss...Because I find that that's the role of the teacher sometimes...There will be times in all three classes where students would just sit there in the corner on their own and can't find a partner, etcetera, so I find that's my role to move students around, so that I make sure that every student is participating. And it is not a difficult job for the teacher, either, and a pair discussion is much, much easier than the group discussion because you do not have to count the number...yeah....
This is also very difficult to determine - how much time you give them...Sometimes students are really enthusiastic, um, there was one group where the students actively argued. So that is actually very good because it is also a model for the other students, so I always give them more time. For all three classes, before I end the discussion, I always ask them: "So, do you need more time?", and then you'd get a response - they will tell you. And then, I'd usually ask them to volunteer to give their answers. Because, by then, they would have reached an agreement with their partner and are ready to tell me what they think. And also in this activity I specifically chose an article (if you have a look at the article number one), this is "Evolution of the upright posture: A new synthesis". I specifically chose this one because students, after just reading the title, they will immediately think that this is a primary source - which is just the opposite - this is a secondary source, even though it is a new synthesis here. This is actually what I have found in different classes - when I ask them to contribute their answer, they are very happy to volunteer, but then, very interestingly, in a class, when students spend very, very little time reading, many of them just look at the article very quickly, even the abstract part they do not read in detail, and then the overwhelming response of that class was that this one is a primary resource. However, the class who spend a lot of time reading first, before they start discussing - all of them agree that this is a secondary resource. So, I think, this is very tricky for students, but also gives a teacher...As a teacher, I actually like this kind of an activity, because I can also tell whether the students are really, really engaged, do they really know what they have to do. For those who did not read carefully - it gives them a lesson, isn't it, so I explain to them: "If you have read the abstract carefully...and especially the conclusion which states that this is also not a new insight, so it's not a primary source..."Many of them actually miss that part. So, I've got my model answer already, of course...but then, again, I still need the tutor for confirmation, and that is a very symbolic part for the librarian, because, (well, we all know what we are doing), to student, if a tutor is there and very supportive of my point of view, it is very effective.

So, throughout the lesson, I spend about half an hour on this first part, and the second part is...Only after the first part I start explaining to them the use of databases to find the peer-reviewed articles. So I didn't start with the databases, the first part of the session (activity) emphasizes that this is (recognising the difference between primary and secondary sources) actually very important part of the information finding process. It is not the research part, because - everybody basically knows which databases to use, and because the searches are on the same topic, they will even enter similar terms. Um, what is important is that they will get the list of 100 or 200 results - how do they quickly decide, what strategies they can use to decide which one is a primary source, which one is a secondary source - that's the requirement of their teacher.

R: This example is amazing, it's incredible!

L: I actually got a really good feedback from the teacher, and it's the lecturer and the tutor who gave me the feedback immediately. They said it's a very well designed class, because actually I have one, two three: PowerPoint slides plus two activities combined to reinforce one theme, and this is actually one thing I have learnt while studying for my Teacher's Diploma. When we did our practicum, we actually had to explain to our supervisor what theme we are going to cover and which activities, which four or three activities are aimed to explain this theme. So, we... this is actually what we have to do. I think this is much better than I expected. I wasn't given much time, I only had three or four days to prepare beforehand. We had a meeting on Wednesday morning, and only then I got to know what they want me to do. I asked them: "When do you want me to have this tutorial...next week?", and they said:" No, next Monday."I only had two days to come up with the completely new course structure. So I was actually quite in a bit of a panic when I was preparing for this class...But then, going back to what you've said about the preferences, what kind of activities do I prefer - I like this kind where I don't have to talk, I'm sure every teacher realizes that. We all know how students create knowledge for themselves and define it in the process, in the peer discussion, about what they need to learn, rather than the teacher explaining things to them. It is much more effective, I think. So, I do believe that this is a successful one, of course, I did not show you the unsuccessful ones.

R: So, how long does it take you to prepare for the class when, for example, it needs to be taught for the second time, when you know you're going to teach it... usually one hour, two hours...? Do you need that extra time?

L: No, I do not need that extra time. Ok, I can tell you that the first class was actually the most successful because there are many factors out there that cannot be controlled by the teacher...As I say; it's the dynamics of the group... Because the first group (class) spent a lot of time reading, but then, only after the whole set of four classes, I learnt from the students' failure, actually, because one class specifically responded unanimously that this is a primary resource, I understand because of that what the problem is - what is the reason why students make the mistake. So, I was thinking, next time, next semester when this course is running again, I will still use these activities, but this time I will separate this one [the second activity] in two parts and in Activity 2A I will just ask them [students] to read the title and then tell me immediately what they think. And in 2B I will say:"So, now, read the abstract.", so that they will understand that it's very different and different answers will be provided. So, it's not that I sit down and spend one hour [preparing for teaching the next session of the same course], but I mean, I get all this from my experience.

*R**: How long does this class lasts? One hour, two hours...?** L: One hour.*

***R: So, basically that first part lasts approximately half an hour?** L: Yes.*

*R**: How many students are approximately in that class?** L: It is always a full class because the attendance is recorded and ticked off. And because this class falls into their compulsory tutorial times, so due to this arrangement, many students will come as this is their regular tutorial time. So, there are always usually between 15 and 20 students in a session.*

R: I know that you have been teaching for a while and that you have a great teaching experience, not to mention the chapter you have published based on your teaching experiences. What we could talk next is a little bit about the activities that you have tried for the first time. In this situation you usually have to judge do they work well or not and what could be changed in future classes. What are the ways you use to evaluate what is happening during the class and what are the elements based on which you decide - "Ok, I am going to do this next time", or "I am definitely going to leave it for now because it does not work so well.."You have mentioned that you have observed students' behaviour and that, based on that and their failure to provide adequate answer; you have adapted the activity for the following class. Are there any other ways you have used to evaluate the situation on the class and the effectiveness of the activity?

L: There are all sorts of ways. For me, as a teacher - it's the teacher's observation that's the best. The thing is, there are those online feedback forms, I've used them, but I don't find them very enlightening. As a matter of fact, many students will say that they agree or disagree, whatever...Of course, if you run a better structured tutorial, as a presenter you know immediately - you don't need the students to tell you that. My experience is that I know whether it's a badly run tutorial and as a teacher, after I have run it, I know exactly what went wrong. You just know it immediately from the students' response whether it was good or not. The best response (in evaluation) actually came from students - it doesn't necessarily have to be verbal - you can tell immediately during the class. If they didn't want to do the task, or if they are,

sort of, disengaged (if they are not engaged)...there must be reasons. It's not that they do not want to learn, of course they want to - that's why they came to the University, and so - there are problems, definitely!
Second way is, of course, [evaluation] from the tutors. Sometimes the students will not tell me, even not in the online feedback form, but they will immediately tell their teacher who will tell me. This often happens with the ENGLISH 101 course because the coordinator is very responsible. Immediately after the class he will ask the students for the feedback and he will give me the feedback after talking to students immediately after the first class. And actually, that happened the last semester, in Semester I, I think I packed too many things into the session. Some students managed to understand the topic well, but for some students whose first language is not English, they could not catch up so well as the others, so they complained to the teacher. I find these types of complaints really good, actually, because they influence me...and in the end I had to take away one database [remove from the course content] just to make sure that I'll have enough time to explain things to them. So, my experience is that students wouldn't really tell you what went wrong because, first - they think you are just a librarian - they won't even see you anymore. They think: "Why should I bother?", which is true, which is not something perfect in the library situation because the teacher has the continuous contact with the students, the teacher will know very well them and the students are happy to talk to the teacher and not to the librarian. So, I don't find those kinds of feedback forms because they are standardized and students will think: "oh, this is just a standard procedure" and do not tell anything. And, so I think that the best evaluation method is my observation, the second one is the teacher's feedback.
R: Let's look at those problematic situations and because as teachers all of us have been through (and I think you grow as a teacher) "the fire"...Have you ever tried (I am sure you have) something for the first time in the class and then decided "I'm not going to do it!"? What have you found, based on your teaching experience, - what kind of techniques do not usually work for you as a presenter after you have tried them in practice? It could be a personal thing; it could be something that worked for someone else, but for you personally as a teacher just did not fit in with your own teaching approach...
Of course, that always happens. It does not necessarily mean that you are a bad teacher when that happens. So, I remember, when I first started at this position (Subject Librarian), I was asked to teach ANTHRO 203. In that course, I was asked to teach anthropology databases, just the general ones, and I was specifically asked to teach that specific database called ...um...eHRAF World Cultures. Ta that time (my first year here), I did not know anything about the database, but luckily I had the previous handout to base my teaching on, but it was still too basic. So, actually, I followed these handout instructions myself - it was hard for me to prepare. I learnt how to use databases...and...you know how when your experience grows in using databases - you need to use it a lot - and my problem with that was my own inexperience. So, basically, what I did - I just changed the activity a little bit - basically it was just a simple search to bring up a list of the documents, then "go and click this and that", you know - it was just a very straightforward one. And, then, it was a terrible activity in the end, because I did not have a good knowledge of the database. When it came up [in the class], I came upon the questions from students that I was unable to answer. The students were very good - they would find the answer themselves even before I could answer it. Actually, it was a bad activity because - the worst thing is - I couldn't answer the students' questions immediately. I stumbled and there were times when I actually looked at the database and I did not know what to do. And secondly, it created a very bad impression to students - you know, as a librarian I feel - they know, they could tell immediately I did not know much about the database. So, it was a big failure, and now I think that the failure was mainly due to the fact that I didn't spend enough time exploring the database myself. But of course, I have to convince myself that nobody's perfect.
R: But what do you think, regardless of what you teach, what doesn't work for students really in your experience?
It's actually very simple. Activities that don't move students won't work. For example, if you teach Boolean operators, even though you could have a wonderful PowerPoint, they will - their minds will wander off. Even if you're telling them what they need to know before they start to search...all presentations, if they are longer than 10 minutes, in my experience - are never good enough.

APPENDIX 7: The University of Auckland Library Permission

THE UNIVERSITY OF AUCKLAND
LIBRARY

Te Tumu Herenga
The University Library

The University of Auckland
Private Bag 92019, Auckland Mail Centre,
Auckland, 1142
New Zealand

26 August 2010

An investigation into the interactive teaching practices of librarians in Information Literacy (IL) instruction at the University of Auckland Library - Neda Zdravkovic

This is to confirm that Neda Zdravkovic has permission to recruit staff from the University of Auckland Library for her research.

Yours sincerely,

Hester Mountifield
Acting Associate University Librarian, Faculty Services

APPENDIX 8: Invitation to take part in MLIS INFO 580 research - individual interviews

Dear All,

Neda Zdravkovic is completing her final MLIS research paper and would like to invite you to take part in a 45-minute long individual interview to discuss the teaching activities you have trailed in your IL classes and your overall experience in applying them. The interview questions are attached for your information.

Interviews will be recorded using a Sony digital voice recorder and transcribed. The data will be emailed to you for feedback and amendment. The data will be kept confidential, and destroyed one year after the completion of the project. You will not be identified by name in any part of the final report and it will not be possible for you to be identified personally.

Participation is voluntary but your support would be appreciated. The interviews will be conducted in the next couple of weeks.

Please email Neda at: n.zdravkovic@auckland.ac.nz if you would like to participate in the interview.

Thanks

Hester

Hester Mountifield
Associate University Librarian, Faculty & Learning Services (Acting)
The University of Auckland Library
Private Bag 92019, Auckland 1142 New Zealand
www.library.auckland.ac.nz/
ph (649) 373 7599 x 88050

APPENDIX 9: Sample survey invitation email

Questionnaire on teaching activities at our Library - MLIS INFO 580 project

Dear colleagues,

For my MLIS INFO 580 research project I am investigating teaching and learning activities currently applied in the Information Literacy classes at the University of Auckland Library and the challenges library presenters encounter while employing these activities in practice.

The questionnaire is available at http://www.surveymonkey.com/s/SKVPBKB. It should only take 5-6 minutes to complete. I would appreciate it if you could reply by Monday, 20th September.

All survey responses are anonymous and it will not be possible for you to be identified personally. You have the right to decline to answer any particular question.

If you have any queries about this study, please do not hesitate to contact me.

Thank you for your time and participation in this project! It would not be possible without you.

Neda

Neda Zdravkovic
Masters Student (Masters in Library and Information Studies)
School of Information Management, Victoria University of Wellington
Email: neda.zdravkovic@myvuw.ac.nz; Phone: (09) 373 7599 ext 83797

APPENDIX 10: Coding categories

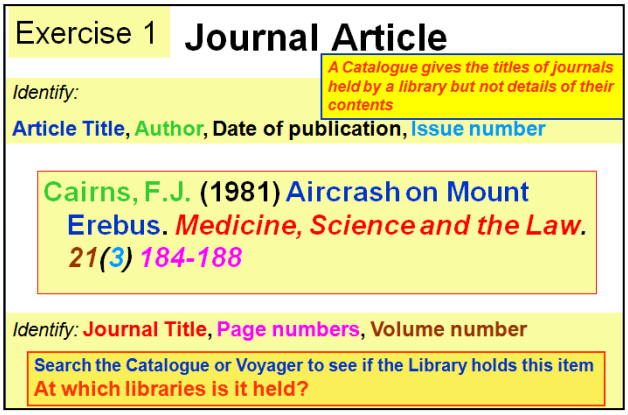
THEMES	CODING CATEGORIES
EFFECTIVE TEACHING PRACTICES	
	THEATRICAL TECHNIQUES
	HUMOUR (with caution - "I'd never use humour related to culture, politics, religion - and those are set standards to avoid in a class"**)**
	CO-TEACHING (enables establishment of relaxed, dynamic and interactive, open learning environment + injection of fun, humour)
	SELECTION/PREPARATION OF SPECIFIC TYPE OF INTERACTIVE ACTIVITY TO ACCOMODATE CULTURAL MILEU & LANGUAGE OF A STUDENT GROUP
	CONTENT VS INTERACTIVITY
	PEER TEACHING - Five librarians commented on the same technique
	"EXTRA FOR EXPERTS" CONTENT/ACTIVITY (COMBINED WITH A DISCUSSION BASED ACTIVITY - FOR STUDENTS AT AN ADVANCED SKILLS LEVEL IN AN IL CLASS**)**
	RELEVANCY OF ACTIVITIES TO STUDENTS' COURSEWORK & ASSIGNMENTS Importance of delivering interactive activities embedded into the context of students' reality.
	FLEXIBLE ACTIVITY STRUCTURE TO ALLOW ADDITIONAL INSTRUCTION STRUCTURING AN ACTIVITY (OR COMPLETE SESSION) TO ALLOW ADDITIONAL TIME (IF NEED ARISES DURING THE CLASS) FOR ANSWERING STUDENTS' QUESTIONS, ADDITIONAL INSTRUCTION AND EXPLANATIONS IN CASE STUDENTS DO NOT UNDERSTAND THE NEW INFORMATION/CONCEPT/IDEA IMMEDIATELY.
	USING FUNNY/CONTROVERSIAL EXAMPLES. Purpose - creating adequate learning environment.
	COLLABORATION WITH LECTURER/ Lecturer present in the IL class/ Lecturer identifies lack of IL skills among students and recommends IL content to be taught/ Lecturer collaborates with Subject Librarian in preparing/designing the course and activities
	PERFORMING MULTIPLE ACTIVITIES DURING THE SAME CLASS TO REINFORCE COMPREHENSION OF ONE THEME/IDEA
CHALLENGES	
	FAMILIARITY WITH A SUBJECT AREA (TRYING TO PRESENT ABOUT THE SUBJECT A PRESENTER DOES NOT KNOW MUCH ABOUT)
	DATABASE INTERFACES & CONTENT CHANGE SUDDENLY
	ORGANISING INTERACTIVE ACTIVITY IN A LECTURE THEATRE (VS HANDS-ON ENVIRONMENT IN A COMPUTER TRAINING ROOM**.** Solutions: use of humour, controversial examples, questions and props (e.g. dog))
	VARIETY OF SKILL LEVELS & PRE-KNOWLEDGE IN THE SAME CLASS (Teaching a variety of students with different skill levels/pre-knowledge in the same class. Solution to this - preparing "extra for experts" content and/or an activity in advance; peer teaching)
	TIME MANAGEMENT 1 1. Managing the duration of an activity - almost unpredictable due to unpredictability of students' response during the activity, especially in the situation where students do not understand the new information, idea or concept immediately and impose a series of questions, require additional clarification and/or are unable to complete the activity due to lack of expected understanding. Practical solution - structuring the session and activities to always allow additional time spent on

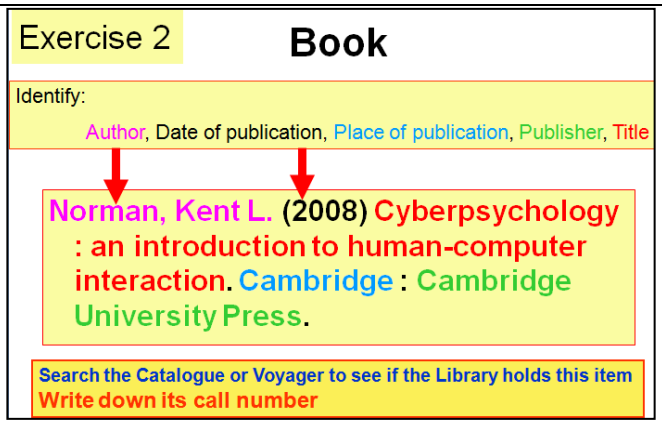
	answering questions and additional instruction (if needed).
	TIME MANAGEMENT 2 - PRIORITISING DUE TO LACK OF TIME 2. Short duration of one-shot session AND inability to see students again impose strong need for prioritising content covered and the type of an activity applied.
	TIME MANAGEMENT 3 3. Lack of sufficient time given (usually by lecturer) for class preparation, mainly related to teaching the same class to different student groups at the time.
	JUDGING THE LEVEL OF INFORMATION & SUFFICIENT LEVEL OF "DIFFICULTY" ARE GIVEN Providing the sufficient in-depth information to specific groups of students (e.g. postgraduates) to satisfy their level of information need, expectations and experience.
	STUDENT BEHAVIOUR/ RESPONSE IN CLASS 1 STUDENTS RELUCTANT TO TAKE PART IN ACTIVITY - SEEING IT AS IRRELEVANT OR AS REPETITION OF PREVIOUS IL TUTORIALS THEY ATTENDED. Students also may have attended a series of other IL tutorials beforehand and recognise repetition. So, either having an additional material for them in the class to do, or letting them know what is going to be covered in advance, so that - if they wish to leave early - they may do so.
	STUDENT BEHAVIOUR/ RESPONSE IN CLASS 2 STUDENT 'TAKING OVER THE CLAS' MONOPOLISING/DOMINEERING/ IMPOSING OPINIONS OR OPOSING VIEW/DISCUSSION
	STUDENT BEHAVIOUR/ RESPONSE IN CLASS 3 STUDENTS QUIET AND RELUCTANT TO RESPOND OPENLY IN FRONT OF THE COMPLETE CLASS/ FEEL UNCOMFORTABLE TO PARTICPATE IN AN ACTIVITY, MOST COMMON OCCURRENCE AMONG FIRST YEAR STUDENTS. (e.g. role-play, peer teaching/presenting) **Solutions:** presenter taking up role of proactive mediator and making the activity structure more flexible - taking the pressure off the reluctant/shy student. Asking students to write their responses instead of presenting them out loud. **Creating safe learning environment - it is safe to make mistakes; it is safe to give wrong answer.** Taking their attention off the activity and introducing anecdotal stories about the presenter - we all are human beings, we all have flaws.
	STUDENT BEHAVIOUR/ RESPONSE IN CLASS 4 MANAGING UNPREDICTABLE RECATIONS OF STUDENTS DURING AN ACTIVITY. Student behaviour during the activity depends a lot on the dynamics of the group itself. Dynamics of the group (in a class) is (pre)conditioned by the learning environment. "Success of an activity is conditioned by the type of the student group in the class and the way group members relate to each other**".**
	STUDENT BEHAVIOUR/ RESPONSE IN CLASS 5 STUDENTS' MOOD VARIES DEPENDING ON THE TIME OF THE DAY AND SEMESTER (EXAM & ASSIGNMENT DUE TIME)
	ONE- SHOT SESSION 1 INABILITY TO SEE STUDENTS AGAIN - The necessity to cover a large portion of content due to the inability to see students again.
	ONE- SHOT SESSION 2 LACK OF CONDITIONS FOR ESTABLISHING / BUILDING ADEQUATE LEARNING ENVIRONMENT IN A CLASS .
	PRESENTER BOREDOM DUE TO REPETITIVE TEACHING OF THE SAME CONTENT (presenters continuously looking for ways to prevent/fight it

	and keep themselves enthused.
	PRESENTER TIRED AFTER TEACHING A SERIES OF CLASSES DURING THE SAME DAY. Solutions - 'act out' enthusiasm from the very start of the class, employing the theatrical teaching techniques, e.g. - humour, act out enthusiasm, etc...
	ACTIVITY PREPARATION 1 ACTIVITY BASED ON ANOTHER PRESENTER'S NOTES AND TEACHING MATERIALS WITHOUT SUFFICIENT INPUT BEFORE THE CLASS.
	ACTIVITY PREPARATION 2 DIFICULTY FINDING ADEQUATE EXAMPLES/MATERIALS FOR STUDENTS TO WORK ON.
ACTIVITIES WHICH DID NOT WORK	
	BRAINSTORMING ACTIVITY
	ROLE-PLAY Conditioned by the ability to create adequate learning environment. Lack of conditions (time, one -off class) for establishing adequate learning environment in the class influences the selection of the type of the activity applied in a particular class. Not enough time given to build/establish a "community of trust" = learning environment. First year students particularly vulnerable if overexposed in such classroom environment.
	ICE-BREAKERS "Extracurricular activities which can be seen as warm ups, but when you're on a very limited time, they may become a struggle."
	ACTIVITIES NOT ADJUSTED TO A LARGER GROUP OF STUDENTS
EVALUATION OF CLASS ACTIVITIES	**EVALUATION FEEDBACK FROM THE LECTURER WHO OBSERVED CLASS**
	INDIVIDUAL FOLLOW UP WITH STUDENTS IN THE FORM OF AN INFORMAL CONSULTATION OR CONVERSATION DURING THEIR VISIT TO THE LIBRARY AFTER THE CLASS.
	FORMATIVE ASSESSMENT 1 INVOLVING A PRETEST AND A POSTTEST AT THE START AND END OF A SEMESTER AND/OR AN ACADEMIC YEAR (mainly applied in integrated IL classes - one specific course programme).
	FORMATIVE ASSESSMENT 2 DURING THE CLASS - AN ADDITIONAL EXERCISE TO TEST STUDENTS' UNDERSTANDING OF NEWLY INTRODUCED SKILL/INFORMATION.
	OBSERVING BEHAVIOUR, REACTION & BODY LANGUAGE OF STUDENTS DURING THE CLASS
	VERBAL FEEDBACK / COMMENTS FROM STUDENTS AT THE END OF THE SESSION
	STUDENTS WRITE AN ESSAY AT THE END OF A SEMESTER REFLECTING ON THEIR LEARNING
	EVALUATION FORMS 1 QUESTIONS RELATING TO SPECIFIC INTERCATIVE ACTIVITIES GIVEN TO STUDENTS AT THE END OF SEMESTER.
	EVALUATION FORMS 2 STANDARD FORMS USED IN ALL IL SESSIONS AT UOA LIBRARY ARE HELPFUL BUT NOT SUFFICIENT.
	ANALYSIS OF STUDENTS' REFERENCES IN COMPLETED & SUBMITTED ASSIGNMENTS
	INFORMAL ASSESSMENT DURING THE FOLLOW UP LECTURE/CLASS WITH THE SAME GROUP OF STUDENTS (mainly in integrated IL classes possible).

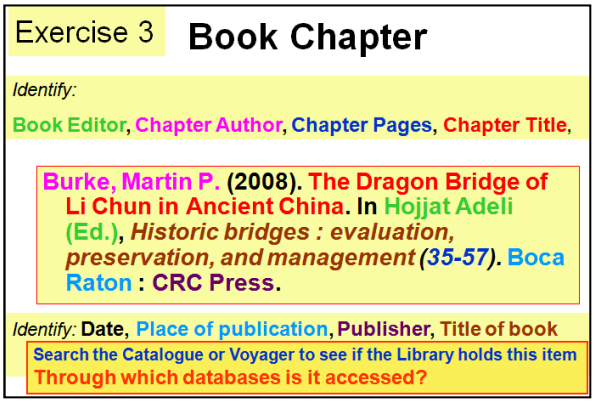
APPENDIX 11: Interactive teaching activities practiced in Library IL instruction sessions at The University of Auckland (recommended by interviewed Subject Librarians as successful in practice)

Activity 1

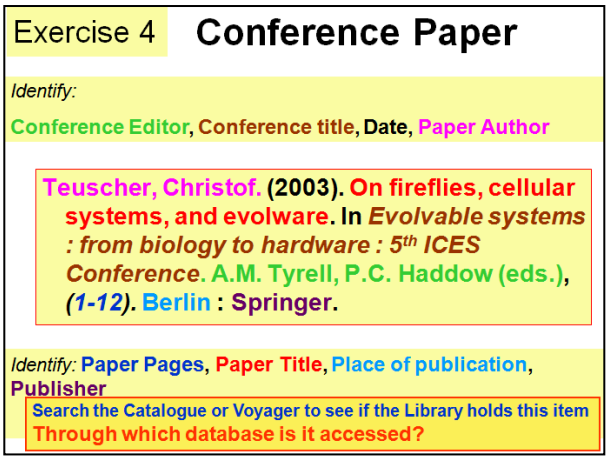
TYPE	Hands-on, computer-based activity including group discussion
PURPOSE	1. To introduce students to different citation elements and enable them to identify different types of references; 2. To introduce students to an online Catalogue and to enable them to search and find different types of materials (online or in print).
DURATION	30 minutes (7-8 minutes for each of the four elements)
TARGET GROUP	Activity is tailored for a relatively large class of 20 - 30 international students who are unfamiliar with the University of Auckland online resources and the Catalogue. The activity is not suitable for students who are already familiar with the online system at the University and the Catalogue.
ACTIVITY DESCRIPTION	Activity consists of 4 consecutive elements. Students are asked to identify parts of a citation displayed on the PPT slide (and also given to them on printed worksheets), select an appropriate online resource and search for the following items: **Exercise 1:** Find the article (not available in electronic format deliberately, so that students have to think through the steps of obtaining the print copy): Cairns, F.J. (1981). Aircrash on Mount Erebus. *Medicine, Science and the Law, 21*(3), 184-188.  **Exercise 2:** Find the book: Norman, Kent L. (2008). Cyberpsychology: an introduction to human-computer *interaction.* Cambridge: Cambridge University Press.



Exercise 3: Find the book chapter:
Burke, Martin P. (2008). The Dragon Bridge of Li Chun in Ancient China. In Hojjat Adeli .(Ed.). Historic bridges: evaluation, preservation, and *management* (35-57). Boca Raton: CRC Press.



Exercise 4: Find the conference paper:
Teuscher, Christof. (2003). On fireflies, cellular systems, and evolware. In Evolvable systems: from biology to hardware: 5th ICES Conference. A.M. Tyrrell, P.C. Haddow. (Eds.), (1-12). Berlin: Springer.



APPLICATION (Subject Librarians' comment):	*Only after we have identified the elements, I say:"Ok, go and find that article, does the library hold it and where would you find it - and you can use any means you like." And, of course, it's unbelievable, there are postgraduates, they go to Google of course, - not many*

	go to the Catalogue. But, finally, you give them a second shot (and few get it but most don't), you say: "Ok - you need to go to the Catalogue." But, that's not enough, because a lot of them will go and type in the article title, or the name of the article author.
CHALLENGES (Subject Librarians' comment):	*You don't need to slavishly go through every element, students can see it quite quickly, once they've been introduced to the idea. It's just that you'd think that once they understand the concept, they'd be able to apply it to the next example, but a lot of them just don't, usually - most of the class. I don't know why this is, because, you see, they are all computer literate.*
RECOMMENDATION (Subject Librarians' comment):	*Now, when we were doing this for the first time, it was a couple of years ago, it's been so successful, so we repeated it. It has taken a long time to discuss it in class, but we still did it. The second time we accelerated it a bit because we were aware that there was a disparity of skills in the class, and that was one of the drawbacks - because a student that's been through the system right through years one to four - he'd probably switch off after few minutes.* *Next year, I'll get them to find an electronic book instead and ask them to connect properly to the book and also ask them which provider they'll have to go through, - which publisher.*
TEACHING MATERIALS	Activity is intended to be practiced in a computer training room, so that each student will have an available PC to work on during the class. A handout with questionnaire - two sided A4 sheet with exercises is given to each student and a PowerPoint slideshow is also shown to students.

Activity 2

TYPE	Exploratory, hands-on & resource-based group activity
PURPOSE	To introduce students to a relevant reference source (dictionary of definitions), and provide them an opportunity to explore it in the class.
DURATION	8 - 10 minutes maximum
TARGET GROUP	First year students completing a paper containing a compulsory research component. There are usually 16 - 18 students in a class.
ACTIVITY DESCRIPTION	Students are asked to work in pairs or small groups - up to 8 groups in a class. Each group is given a printed copy of a dictionary of definitions in a specific field. Activity is not computer based. Presenter introduces the dictionary as a reference tool, and its usefulness for their assignment preparation. Presenter writes on the whiteboard (or displays on a PowerPoint slide) the term students are asked to find about in the dictionary and a representative of each group to report back/discuss the definition found.
CHALLENGES (Subject Librarians' comment):	*Often I'll ask someone to volunteer to help, if I find that students are too shy to speak, or provide a wrong answer. Using the dictionary is reasonably simple (as a tool) and we're not asking them very difficult questions, but it is a situation here students are put on spot and they have to provide the answer fairly quickly. Students suddenly find themselves working in the group of 16 - 18 people they don't know very well, and are weary not to look silly, and we try to insert humour as much as possible.*
RECOMMENDATION	Activity is straightforward and should not last longer than 10 minutes. In the same class, a variety of other types of sources are also introduced to students.
TEACHING MATERIALS	8-10 printed copies of a dictionary of definitions. PowerPoint slide or a whiteboard.

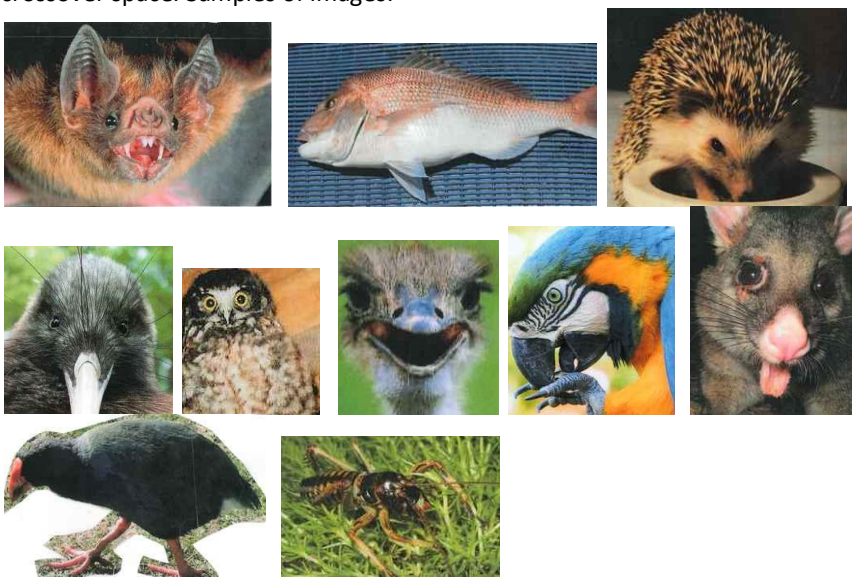
Activity 3

TYPE	Quiz: game based learning and an ice-breaker activity
PURPOSE	To raise students' interest levels and enhance their concentration.
DURATION	3-5 minutes maximum
TARGET GROUP	Undergraduate students
ACTIVITY DESCRIPTION (Subject Librarians' comment):	*In some of the more advanced classes, as a warm-up, especially if it's an early morning or late afternoon class, when everyone just wants to go home, all students in a class are asked to stand up. We may ask relevant, general knowledge type of questions, like:"Who's the Prime Minister of Australia? If you don't know the answer, please sit down". (half the class will sit down). Then we ask the second question to the remaining standing group, and so on, until there are only one or two students standing - and they are the winners. We usually have about 5 questions and we have little bags of lollies as a prize for winners.*
APPLICATION (Subject Librarians' comment):	*Sometimes we have to cover a lot of information and just having a little break time like this, referring to the general knowledge students can relate to, can refresh their memory and concentration.*
CHALLENGES (Subject Librarians' comment):	*It is not possible to do that sort of thing with every class, especially if students already have lots of questions to ask related to their course materials and assignments. We usually have a very tight-packed sessions to deliver.*
TEACHING MATERIALS	5 general knowledge questions related to an academic subject area. A bag of lollies to share with "winners".

Activity 4

TYPE	Role-play activity
PURPOSE	To enable association of student learning to the real -life application and situations.
DURATION	Depending on the number of participants, maximum 30 minutes.
TARGET GROUP	Masters, PhD students or university staff (general and/or academic). Activity is not recommended for undergraduate students.
ACTIVITY DESCRIPTION	Students are split into smaller groups. Each group is given a different scenario (real-life situation and/or a problem) on a printed sheet of paper. Their task is to discuss the scenario/problem in the group and think about possible solution. Two volunteers from each group are asked to come in front of the class and either read the scenario out loud or act it out (if they would like to) and present their solution to the scenario/problem. The rest of the class is asked to discuss the solution proposed by 'actors' after each role-pay/scenario reading.
APPLICATION (Subject Librarians' comment):	*Unless you get the class in the right frame of mind and you give clear, explicit instructions that it's not going to be something that people will be targeted on or have any sort of mocking or anything like that, then it probably wouldn't have worked so well. We say to students:"Here's your script, make sure you read and discuss in your group about what solutions would you come up with to solve this problem and then come back and present that to the rest of the class. Instead of reading the script, you may pretend that you're Angelina Jolie and Brad Pitt and put up your best academy award winning performance." Some students really get into it and act the scene out just like on the real stage and some only read the script out loud like plain text - and there's nothing wrong with that. So, again - you've got to choose the right teaching scenario. The class actually starts with the PowerPoint, questions for feedback to get students participating straight off and thinking about the issues to be discussed; there's also a YouTube clip we show before the role-play activity, there may be more questions and explanations, and the role-play actually is performed at the end - so that they've got the knowledge (hopefully from what we've discussed in the class), they have relaxed a little bit with the humour displayed in the PowerPoint and they have gotten used in this class by now that their participation is expected and required - and natural component of their learning and training.*
CHALLENGES (Subject Librarians' comment):	*You have to be careful for people not to feel insecure to communicate because they get stage fright or feel overexposed. And it is always a matter of balance between giving the information to them and getting them to feedback on it in a form of a role-play.*
RECOMMENDATION	This activity is more suitable for smaller classes as it may end up taking a large portion of class time (including the discussion after each scenario) if more than 3 scenarios are acted out.
TEACHING MATERIALS	3 - 5 relevant scenarios on printed A4 sheets. A video clip to introduce the activity at the beginning (optional).

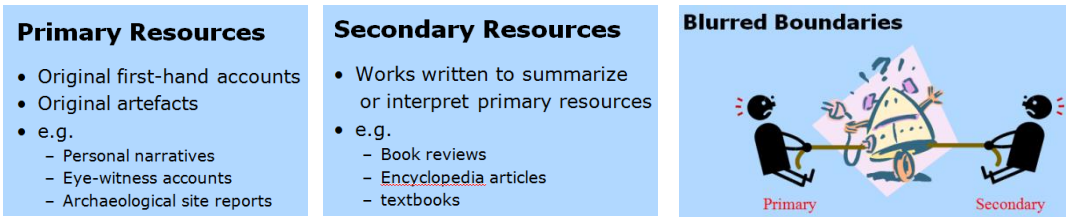
Activity 5

TYPE	Game-based learning (*Boolean game*)
PURPOSE	To introduce students to Boolean operators
DURATION	20 - 25 minutes
TARGET GROUP	Undergraduate students (a class of 18 - 20 students)
ACTIVITY DESCRIPTION	Each student is given a photo of an animal (either birds, New Zealand natives or nocturnal). Presenter puts up a felt sticky board in front of the class with three circles drawn on it (Venn diagram): one circle named "BIRDS", second circle named "NOCTURNAL", third circle named "NZ NATIVE". Students are asked to come out and put their pictures up on the board where they believe they logically belonged, including the crossover space. Samples of images:  After all photos are up on the board (in circles), the presenter initiated the discussion about the Boolean operators - students are asked to comment on their selection of a circle and the position they have placed the photo of an animal.
APPLICATION (Subject Librarians' comment):	*This is something that we did quite successfully throughout a number of years and students got a lot of amusement out of it. So, there's a lot of laughing, having fun with it - but they are actually quite a cohesive group anyway, so they could say (feel free to say):"No, no - you've put that in the wrong place" and similar.*
CHALLENGES (Subject Librarians' comment):	*Time management is a challenge - if there is a relatively large number of students in a class, the activity and the follow up discussion may prolong unexpectedly and take up a larger portion of the complete session.* *Student behaviour during the activity depends a lot on the dynamics of the group itself. The activity wouldn't necessarily work well with other (non-cohesive) groups where the thought of actually having to stand up and come out in front of the class, put something up and get it wrong - would be a sort of a struggle and a cause of unpleasant anxiety.*
TEACHING MATERIALS	1. A photo of an animal for each student in a class. Animals need to be either birds, nocturnal or NZ native. 2. Sticky felt board with three large circles (Venn diagram) drawn on it (or this could be drawn on a whiteboard, so that photos can be fixed on it with blue-tack)

Activity 6

PURPOSE	Game-based learning (*Citation scrabble*) - jigsaw model, suitable for small number of students
DURATION	15 - 20 minutes
TARGET GROUP	Undergraduate students - first year The activity is suitable for smaller classes of 15 students and less
ACTIVITY DESCRIPTION	Students are split into 3-4 groups (depending in the class size). Each group is given one reference (different reference for each group, e.g. article, book, or a book chapter) cut into pieces (e.g. author = one piece, title= second piece, etc), one A3 white sheet of paper, sellotape and scissors. Their task is to put the reference back together in APA Style (or any other reference style required to use in their coursework), tape the reference together on a A3 sheet of paper and put it up on the whiteboard (or classroom board) using sellotape. Students are encouraged to (if unsure how to put the "citation scramble" together) look up the referencing style rules online using the training room PCs (presenter may suggest the website or URL of recommended style guide online). Once all references are put together and displayed, a volunteer from each group is asked to explain the reference and the referencing style rules they have followed.
APPLICATION (Subject Librarians' comment):	*The citation scramble activity was actually really good in theory, but because we had a big class and quite a few groups - it went on far too long to get each group to report back and show their references put together. That is something that I may do again, but I will probably do it with a smaller class, so that they do not get bored while waiting for each group to report back.*
CHALLENGES	Time management - if there are more than 15 students in a class, the activity may last longer than anticipated.
TEACHING MATERIALS	1. One reference cut into pieces for each group in the class (different reference for each group). 2. One A3 size white sheet of paper for each group 3. Sellotape & scissors 4. URL of the specific reference style guide website students can refer to during the activity. 5. Whiteboard or space on the wall for students to put up their A3 sheets with completed 'citation scramble'.

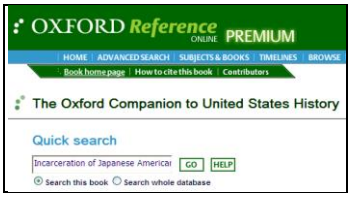
Activity 7

TYPE	Exploratory, resource-based activity involving group discussion
PURPOSE	To enable students to distinguish the differences between primary and secondary sources of information.
DURATION	30 minutes
TARGET GROUP	Class of 15 - 20 undergraduate students
ACTIVITY DESCRIPTION	Activity consists of three parts reinforcing the same skill. Firstly, presenter shows PowerPoint slides and introduces differences between primary and secondary sources:  Secondly, students are given the list of sources (in the printed activity worksheet) and asked to distinguish which ones are primary and which ones are secondary sources. The task is presented in the worksheet like this: *Exercise I: Decide whether each of the following is a primary (P) or secondary (S) source – indicate using P or S.* • *pottery* • *Aboriginal paintings* • *Scholarly journal articles (criticisms and commentaries)* • *Dictionaries* • *A book that sums up human prehistory based on existing archaeological findings* • *Excavation reports* • *Research diaries* • *Autobiographies* • *Clifford Geertz's the Interpretation of Culture* • *Tombstones* • *A book that hypothesizes why a prehistorical homo species becomes extinct* Thirdly, students are given printouts of two journal articles (only the first and the last article pages are provided) and asked to read both examples. Their task is to introduce themselves to the sudent sitting next to them, work in pairs and discuss which of the two articles is a primary or a secondary source. All students are given two same article examples. The task is presented in the activity worksheet like this: *Exercise II: You will be given two journal articles (only the first and the last page are given). Quickly read through the pages and discuss with your classmate whether it is a primary or a secondary source. State the reasons.* _____ _____ _____ After 3-5 minutes, each pair is asked to tell their conclusions to the rest of the class.
APPLICATION (Subject Librarians' comment):	*So I have a PowerPoint up and explain them the differences - then I ask them if they have any questions - nobody has questions, because the definition of each of them seem very simple and straightforward, so students have no questions because they think: "Oh, that's easy!", but when they are asked to do the task, that'll be the different thing. So, then I explain to them that there are*

	often blurred boundaries between the two which are often really difficult to distinguish. *In activity one, I give them a list of items (in the handout, on page two), I say - "I give you two or three minutes and then each of you will have to write out against each item - what do you think about these resource, is it primary or is it secondary and write it down." This is a very much a personal activity, each student has to do it individually, and so they write it down and afterwards I ask them to contribute their answers. This is a very good way to engage them, everybody has to do the task and everyone has to contribute their answers. So I ask them to take turns to tell me their answers. And as you can see, there are eleven items, however, when I go through and for each answer I ask for their class feedback. For example, if somebody says "this is primary", and I ask for their feedback "So - do you agree?"and on most of the items they agree; for some - they don't. So it's a good way to engage a student, because they are responding not to me, but to their classmates. And because each one of them has put their answers down (in the handout), if their answer is different, they are happy to say that. Each student will have their own point of view and explain why they think it's a primary or secondary, and then I will, of course, listen to them and explain how I would look at the resource.* *This is something like a real life situation; they really have to decide now between the two articles - which one is a primary, which one is a secondary. Also - this is also embedded into the activity: I do not explain to them that, in order to evaluate the article, you cannot just read the title; you have to go to the abstract and of course - the introduction. To be able to evaluate an article, you need to at least go to the conclusion as well [if you are not reading the full article]. I do not explain that explicitly, but it is embedded into the activity. And this is something they need to do in reality, in order to identify the primary and secondary sources that are relevant. Very interestingly, in a class, when students spend very, very little time reading, many of them just look at the article very quickly, even the abstract part they do not read in detail, and then the overwhelming response of that class is that this one is a primary resource. However, the class who spend a lot of time reading first, before they start discussing - all of them agree that this is a secondary resource. As a teacher, I actually like this kind of an activity, because I can also tell whether the students are really, really engaged, do they really know what they have to do. For those who do not read carefully - it gives them a lesson, so I explain to them: "If you have read the abstract carefully...and especially the conclusion which states that this is also not a new insight, so it's not a primary source…"Many of them actually miss that part. So, I've got my model answer already, of course...*
CHALLENGES (Subject Librarians' comment):	*And so, I gave them 5 minutes, in some classes they need more than 5 minutes, so I give them between 5 to 9 minutes. As a teacher, you can tell that they are still reading, that they haven't started talking yet, and that they still need more time. The dynamics of each group varies each time. Sometimes students do not need the teacher to help them - if they are a very interactive group, if they know each other very well, they will start discussing quickly; I also had a group that finished reading and then just looked at each other without talking to the person to the right or the left from them. I just keep watching them and I feel in a very good position to direct them as to what to do next. There will be times in classes where students would just sit there in the corner on their own and can't find a partner, etcetera, so I find that's my role to move students around, so that I make sure that every student is participating. And it is not a difficult job for the teacher, either, and a pair discussion is much, much easier than the group discussion.* *This is also very difficult to determine - how much time you give them...Sometimes students are really enthusiastic, um, there was one group where the students actively argued. So that is actually very good because it is also a model for the other students, so I always give them more time. For all three classes, before I end the discussion, I always ask them: "So, do you need more time?", and then you'd get a response - they will tell you. And then, I'd usually ask them to volunteer to give their answers. Because, by then, they would have reached an agreement with their partner and are ready to tell me what they think.*
RECOMMENDA-TION (Subject Librarians' comment):	A well structured activity allowing additional time for an in-depth class discussion. It has received positive feedback from both students as lecturers. *After a series of classes, I have learnt from students' failure (complete class wrongly unanimous that secondary source article is a primary one) and I understand the reason why students make the*

	mistake. So, next semester when this course is running again, I will still use these activities, but this time I will just ask them [students] to read the title and then tell me immediately what they think. And then I will say:"So, now, read the abstract.", so that they will understand that it's very different and I hope that different answers will be provided.
TEACHING MATERIALS	1. PowerPoint slides introducing differences between primary and secondary sources 2. Activity worksheet for each students in a class 3. An example of an article as a primary source (title, abstract, introduction and conclusion parts printed) for each student 4. An example of an article as a secondary source (title, abstract, introduction and conclusion parts printed) for each student. Articles used in the past for this activity are: Niemitz, C. (2010). The evolution of the upright posture and gait - a review and a new synthesis. *Naturwissenschaften, 97*, 241-243. Sylvester, A.D. (2006). Locomotor decoupling and the origin of hominin bipedalism. *Journal of Theoretical Biology, 242*, 581-590.

Activity 8

TYPE	Hands-on, resource-based exploratory activity - finding and evaluating references for an essay
PURPOSE	To enable students to select and evaluate readings relevant for their coursework
DURATION	45 - 50 minutes
TARGET GROUP	Undergraduate students
ACTIVITY DESCRIPTION	Activity consists of 4 parts and it encompasses one complete IL course-related session. Each activity part lasts approximately 10 minutes. **Part I** - Students are asked to open a reference book online (e.g. Oxford Reference Online database, book *Oxford Companion to*…), search for an entry on a topic, read the article and comment on it to the rest of the class. In the activity worksheet, the activity is presented as: **Reference Books** Boyer, Paul S., ed., *The Oxford Companion …*, Oxford, 2001. Look up this topic: "Incarceration of Japanese Americans"  • Comment on the article. How comprehensive is it? What is the author's argument? • How comprehensive are the footnotes and bibliography? • Is this article suitable for your essay's bibliography? • When was the article written, and who wrote it? • Do we have any books by that author, or other books on the same subject? **Subject Librarian's comment:** *At the end of the article is a short bibliography or the reading list - and this points us to the next topic which is finding items from a reference list. For all of their essay topics, there are lots and lots of books and the students just have to choose a few of them, so we try to get them to evaluate what they find, which is a more difficult thing than just following a list. So we look at the things such as the date of the article, the authors' names, and here you can see that I've highlighted one of the books - it's called Prisoners without trial - and what we do, we go to the next section, which is looking at that book in the catalogue.* **Part II:** Students are asked to search for a book title in the library Catalogue, find related Subject Headings on the book record and locate more useful books (in Catalogue) on the same topic. Students are also encouraged to repeat the Catalogue search using recommended synonyms. In the activity worksheet, the activity is presented as: **The Catalogue** 1. Copy and paste the title of the book into the catalogue: Daniels, R. *Prisoners Without Trial …*  2. Either click the link to the subject, or type in these other subjects: [list of

	associated Subject Headings] 3. Other synonyms, phrases and keywords: [list of relevant synonyms, phrases (in double quotes) and keywords] 4. When searching the catalogue, look at the variety of terms authors have used to describe the same subject. Try several different terms. Expert *Cataloguer* searchers can try using this Keyword Boolean Search: [example of the search strategy] **Part III** - Students are asked to go to a particular database (e.g. JSTOR), search by the book title (found previously in the Catalogue) and find a review article of that book. In the activity worksheet, the activity is presented as: **Book Reviews** 1. What are the strengths and weaknesses of this book? 2. Who is the reviewer? What are their credentials? 3. Can you cite an academic book review in your essay?
APPLICATION (Subject Librarians' comment):	*For each exercise, I'd first demonstrate briefly from the presenter's computer, and then give students few minutes to do the exercises themselves. We begin with searching the catalogue and we find lots of books and we want to find the best book on the subject. And, of course, we don't know anything about the subject, we don' know how to evaluate...So, we're going to find an expert opinion from an academic book reviewer. So, then we want to know how do we find the book reviewer...and so we will find the book review by going to one of the journal databases, and we look for the title of the book and we find the review. Students have to read that review during the activity and then from here find out what are the strengths and the weaknesses of the particular book. So, students are given the time in the class to choose the book review and then read it.* *In this case, because this is the first review we are dealing with, I tell them to choose this specific one. And I tell them why - for example - it is from the leading journal on the subject, so it's most likely to be reliable and written by an expert author, and they've got about 5 min to read the review and you can see at the beginning it says how good the book is. Later on it talks about the focus of the book ant that's one of the things we're going to say, e.g. "It's a good book, but it focuses on … rather than …". That's meant to guide them in their reading, so, if they are looking for … - they won't find it in the book, if they are looking for … - they will.* *We've had quite a few different questions and we worked in different ways. Sometimes the students just sat silently and read text by themselves and sometimes they jotted things down on their worksheets, other times there was a lot of talking in groups and I suppose it depends on who knows who in the class. But the thing that we want to get out of it at the end - they should have picked up few of those key points about the book and we just talk about that as a group and we spend another 5 minutes doing that. The complete tutorial in structured in a form of a layered activity which introduces students to the described themes (accessing, using and recognizing relevant sources of information, information retrieval, and evaluation).*
CHALLENGES (Subject Librarians' comment):	*Students' behaviour during the activity varies with different groups. Some of them talk quite a lot and it is easy to get answers out of them, in some groups it is painfully difficult to get answers to some of the questions, and I do not know if that's just due to different personalities of students...I do not know...As far as I can tell, I was doing the same thing each time, but some students were just more responsive than others. And I do not really know the answer to that. And it is a bit of a problem, because the whole session is structured around people doing the exercise and then reporting back their ideas.* *Ina silent class, sometimes you just have to prompt people, specifically ask students: "What do you think about that?" Some students don't like when they are specifically asked a question, hopefully I try and pick someone I know would be happy to answer.*
RECOMMENDATION	*This tutorial is the product of a series of developments we have done in previous years. In past years we have looked at things like referencing books - se we passed around printed*

(Subject Librarians' comment):	*copies, but it was not very practical with large numbers of students because I either had to carry 20 reference books, or they all had to pass few copies around and just sit waiting for their turn. So that didn't work very well, so instead I've chosen an online reference book with a short article, so they all had something to look at - at the same time. The complete activity is structured to last 45 minutes within an 1 hour long tutorial, so the idea is that we can take it slowly without need to rush, and we give people enough time to read the articles and to think about the answers. Sometimes we finish the activity at 10 minutes to the hour or maybe quarter to.*
TEACHING MATERIALS	1. Activity worksheet given to each student in the class 2. Access to online resources (computer training room)

Activity 9

TYPE	Exploratory, hands-on computer based group activity involving peer teaching/presenting. Jigsaw learning model.
PURPOSE	To familiarize students to a number of different electronic databases in relatively short period of time (one class)
DURATION	50 minutes - 1 hour
TARGET GROUP	Postgraduates (senior students with more experience and confidence), course-related class
ACTIVITY DESCRIPTION	Students are split into a number of small groups (2 - 3 in a group). Each group is given a worksheet listing a database, assignment topic and specific type of material and information to be found. Each worksheet lists different database (relevant to the subject area) , the same assignment topic and questions prompting students to look for in a database. Each group is asked to locate a different type of material in the assigned database and is given 15 minutes to complete the task. In the following 30 minutes of the class each student from the group is asked to come behind the lectern and present to the rest (in a role of a "database search expert") the database elements he/she has discovered in the process of searching. Each database is opened and projected on the screen, so that all students can see it. In this way, depending on the number of students in the class and groups, at least 3-4 different databases are introduced in relatively short period of time.
APPLICATION (Subject Librarians' comment):	*In courses where students need to use a half a dozen different databases, it would be pretty dull to just go into a dozen different websites and say: "Look - here you use an asterisk as a truncation symbol, here you type this in search box, there you type that in search box..." - it's not a very interesting presentation. So, instead, we organize them into groups and they all investigate one database in a group and report back what they've found. So, they have to talk about those new details they've discovered in a role of an "expert" introducing new database to the class. I sometimes ask for a representative of a group to report back, or ask each student to say a sentence so that everyone contributes equally. The complete activity is run throughout the whole hour: in the first 5 to 10 minutes I would introduce different resources we would use, and then they'd have 15 minutes to explore their databases and I would provide them with questions on a printed worksheet to go through in their group. The questions prompt them to look for different types of information in a database, such as: "Is this peer reviewed information? Is it a primary or secondary source? Is it full text?" and so on. While trying to find specific type of information in a database, students get to know the database in the process as well. The rest of the session - last 30 minutes, students would spend reporting back. There were 15 students in this particular tutorial. I have performed this activity only once, but I will definitely do it again.*
CHALLENGES	Time management and ensuring that each student in a class gets the opportunity to report

	back in a role of an "database search expert". Since the activity prompts students to come out in front of the class and present, it is not recommended for undergraduate students, but more mature and confident postgraduates.
TEACHING MATERIALS	Activity worksheet given to each group in a class, a computer training room with PCs and projector

Activity 10

<table>
<tr><td>TYPE</td><td>Exploratory, hands-on computer based group activity involving peer teaching/presenting. Jigsaw learning model.</td></tr>
<tr><td>PURPOSE</td><td>To familiarize students with evaluation criteria for web-based information from a variety of sources (e.g. databases, websites, blogs, Wikipedia, Google, etc)</td></tr>
<tr><td>DURATION</td><td>30 minutes</td></tr>
<tr><td>TARGET GROUP</td><td>Undergraduate students</td></tr>
<tr><td>ACTIVITY DESCRIPTION</td><td>Students are split into groups. Each group is given activity worksheet listing URL of the online source to evaluate (e.g. government website, private website/blog, Wikipedia entry, and specific criteria to base evaluation on (e.g.- accuracy, authority, currency, etc). Each worksheet lists different source and one specific criterion, different for each group. Questions are also listed for each criterion to guide students in the process:
<table>
<tr><td>Source (REF style)</td><td colspan="2">URL</td></tr>
<tr><td rowspan="3">Authority</td><td>Is this an organisation's or a personal website?</td><td></td></tr>
<tr><td>Are the owner's/author's name & contact details given? (You could check them for accuracy.)</td><td></td></tr>
<tr><td>Does the owner/author list credentials that are relevant to the field? (If not try checking them on Google.)</td><td></td></tr>
<tr><td rowspan="2">Accuracy</td><td>What evidence is given to support the information on the page?</td><td></td></tr>
<tr><td>If appropriate, are references given? (You could check them for accuracy.)</td><td></td></tr>
<tr><td>Objectivity</td><td>Is the owner/author likely to be objective?</td><td></td></tr>
<tr><td rowspan="2">Currency</td><td>Is there any indication when the page was last updated?</td><td></td></tr>
<tr><td>Do links on the page work?</td><td></td></tr>
<tr><td rowspan="2">Audience</td><td>Who is the page for and what is its purpose?</td><td></td></tr>
<tr><td>Does it fulfil its purpose?</td><td></td></tr>
<tr><td>Summary</td><td colspan="2"></td></tr>
</table>
Students are given 15 minutes to look at the website and evaluate it. A volunteer from each group is asked to report back to the rest of the class their findings in the following 15 minutes. In this way, a variety of different web sources are evaluated and all evaluation criteria covered.</td></tr>
</table>

APPLICATION (Subject Librarians' comment):	*Part of the activity is also that students are asked to write the website reference in APA 5th (the website they are evaluating) at the top of their worksheets, so that element of referencing also is added to it - students have to think about and learn how to reference a website. We provide them the guidance on how to apply the referencing rules to different types of websites, such as government one and a private blog at the beginning of the class.* *For each source they have to do something different - so I divide them into groups and assign each group a specific task. For example, on one professional website, they have to look for currency, for Wikipedia entry - they evaluate the accuracy, etc. So I tell them:"Ok, go and have a look at the website and come up with what you think the authority is, if you have time, try to figure out the complete website or have a look at the other ones, but they have to feedback just on the site they were assigned to at the beginning of the activity and the criteria they had to evaluate. And that works really well. There are times when they are a bit quiet, but because they are working in pairs or threes - that actually helps them to answer the questions. We usually have 18 people in this class, so there are at least four groups in this activity.* *There usually are no problems in getting them to feedback on, because they knew that I'd pick on them if they remain passive and once they get started, then the discussion just develops naturally. There is no disagreement among groups as they are all looking at different sites, so that they all have a chance to look at the variety of examples in such a short period of time and still get the benefit of the evaluation outcome for each one of them. When students talk about their websites, I bring up the website screen, so that the rest of the class can also see what kind of information is evaluated.*
CHALLENGES	Time management
RECOMMENDATION (Subject Librarians' comment):	*Most students participated really well in this activity because all were clear about the task they had to do and some of them actually went into quite a fine detail and provided a lot of feedback. For example, while evaluating Wikipedia article - they have found much more information than I did - just because they were three of them looking at it at the time. I think that it was quite good activity, well utilised by students and well organised.*
TEACHING MATERIALS	Activity worksheet given to each group in a class, a computer training room with PCs and projector

Activity 11

TYPE	Discussion based group activity
PURPOSE	To introduce Maori & Pasific students to their assignment research topics and initiate the information research process.
DURATION	50 minutes
TARGET GROUP	Maori and Pasific undergraduate students
ACTIVITY DESCRIPTION	Activity encompasses a complete one hour tutorial which is held in a Marae (whare). Each student is asked to select and sit next to a carving, read the information about it displayed at the bottom of the carving, think about reasons for selecting the particular one and possible connections to it (both emotional and ancestral). After 5-10 minutes given for reflection, each student is asked to report back to the class his/her findings and conclusions. The activity is liked by the presenter to the information research process and the information about each carving linked to students' assignment/ essay topics. Students are also asked to identify keywords and synonyms they would use to search databases and online resources for more information in future. **Subject Librarian's comment:** *Most of the time, if they are Maori, you'll see them attracted to the particular carving. For example, if they originate from the North, they'll pick the carving with its head tilted that looks a bit like an eel, so they'll congregate towards that one and it's not until they've actually looked that the name of the carving that they realise it's actually one of their tupuna...That sort of an emotional contact that's a tie in as well, and for those students that aren't Maori and who are Pasific - they'll group towards the carving that comes from the Pasific, or you'll get some that sit there and head towards a whale rider...They may not have a connection whatsoever, but for the Pasific people - that is a connection to them. And for people from all over - they'll just congregate towards one carving without having any idea why, but, when they actually research what it means or what the carving is about, then they'll sit in and realise:"Oh, I do actually have a connection to it...", so that's what the whole activity is about. And it's a win-win situation because the activity has the emotional context and then there's "touch and feel it" element, so that when students look at the carving they remember:"Oh, my nanny used to talk about this", there's a bit more memory and a bit more relish into what are they doing in the class.*
APPLICATION (Subject Librarians' comment):	*When we're inside the Whare or the Fale, when we're talking about how to research and understand your questions, one of the activities I do is that I get the students to pick a one of the pou or one of the carvings and actually stand by it and start having a discussion about what they feel about it and try to understand it without having any information prior to that. So that when they go away, they take away their feelings and emotions. There's a win-win situation - they have a buy-in and they'll go away and research it. They'll look at the name at the end of it [meaning - the carving] and say:"Ok, if I want to research this, I'll use that name", but because of the way they've looked at the carvings, the writings on it, or the whakairo as we call them, they will go away with those as well which gives them a better understanding as to what to research. So, it opens the way - instead of us just trying to talk about subject headings and stuff like that...So, you create that discussion, and then, everyone has their own discussion and they have sharing around and that's how it works, that's what we call wananga. And when you wananga, you get more out of it because it sinks in...We're oral people, we're not really writing people, I mean; the writings are on the whakairo doing ko tukutuku, but those kind of writings are hands on writings, and that's what we need to do to be able to actually make it, as we call it, ka tuhi i to rae which means "writing into the memory", instead of writing it on the piece of paper.*

CHALLENGES (Subject Librarians' comment):	*Our students are so used to putting everything on the computer, but, it's like a storage facility that's not their mind, so they write it there - and then they leave it. And then - never ever go back to it. It's like:"Ah - it's there, we can always go back to it whenever we want". So, what I'm trying to bring back in, is that they actually sit there and they handwrite, because when they handwrite, they're actually writing it into a memory themselves.* *When you watch students while you're teaching and it's all about the computer and sitting behind the computer and listening to a person and they're all gobsmacked and they won't ask any questions because they're being given all this information and they're thinking:"I don't know whether I am wrong or I am right...", well if you put them in a situation where they're just in a wananga and are no barriers - and that's where the discussion happens and they do want to interact.*
RECOMMENDATION (Subject Librarians' comment):	*Their research actually begins in the class, during the discussion, while they look at the carvings, examine it, touch it and have the whole persona in front of them. They are actually researching at that moment. It is a different type of the way to research...* *For our thoughts, as librarians, we are thinking about research as seeking for information through different kinds of avenues, well, in this example - the object is information itself. For example, when we talk about the carvings in the whare, it's also - any room - you know how you always talk about being a fly on the wall? - well, we always talk about - if walls could talk? - so they hold the korero and within the room, that korero was part of the tradition, so the more really you discuss things, the more open opportunities there are to actually open the minds of our students (and staff). So, that's pretty much how we're working at the moment, and how we like to work, so...*
BACKGROUND (Subject Librarians' comment):	*When you wananga in the old days, we've had the wananga in the middle of the night. Pure darkness, there was no electricity in those days. Even nowadays people are recreating to that situation by sitting amongst the forest at night - so that's your whare. And what it really is - you listen to someone and because you cannot hear anything else [you can hear the crickets chirping away] - but all you can hear is actually the korero, you don't close your eyes - you keep your eyes open and it's like your eyes and your ears are the pen and the paper. And you can't see anything else, you've got no distractions. And that's what's so good about the whole whananga and the discussion thing is that there are no distractions from any other item and any other resource you could be playing around with. So, that's the whole idea of whanaga and that's what I'm talking about as ka tuhi I to rae - as - it writes into the memory. So, we address 5 main elements of whananga - how you receive the information, how you disseminate information or how you actually bring the information back out there and how you look after the information. So, in a wananga, what you do is actually remember it by right, and you listen to them, but when it comes time for you to actually recite back in the middle of the night, when you pretty much didn't get any sleep, so if you had to work in the garden all day and then you've got to stay up, and of course, the more tired your brain gets, the harder it is to capture information...So, when you recite it back, you've got to recite it word for word, same infliction, and not to make it wrong and not to add any of your own changes...so that's how our whole intergenerational transmission happens. So, we're trying to create the same thing while sitting inside the whare with the carvings and all of that sort of stuff.*

APPENDIX 12: Survey results summary

Question 1:

How long have you been teaching Information Literacy (IL) classes?		
Answer Options	**Response Percent**	**Response Count**
Less than one year	3.3%	1
1-5 years	36.7%	11
More than 5 years	60.0%	18
	answered question	**30**
	skipped question	**0**

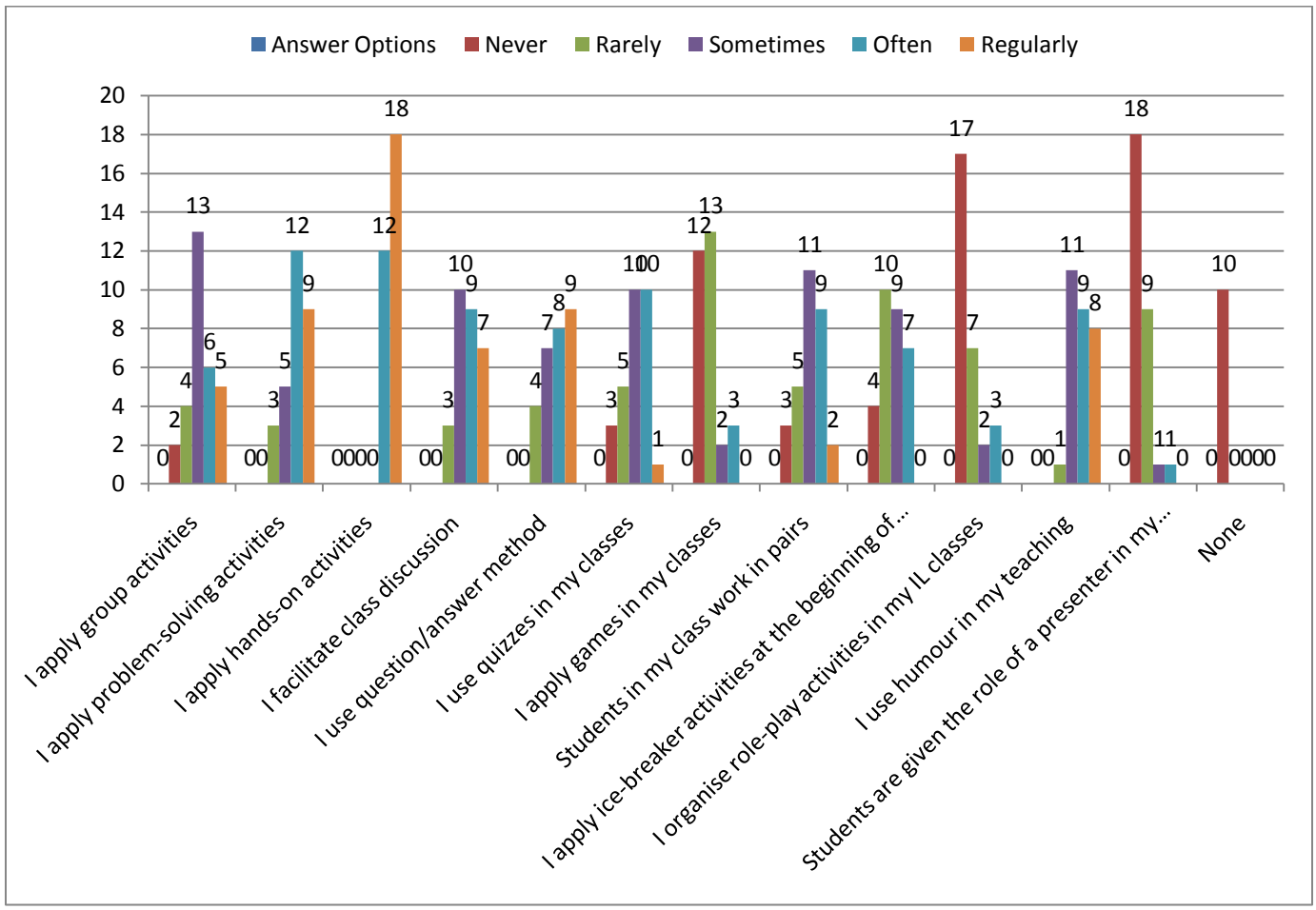
Question 2:

How many IL classes do you approximately teach per year?		
Answer Options	**Response Percent**	**Response Count**
1-10	23.3%	7
10-30	43.3%	13
30-50	13.3%	4
50-70	10.0%	3
70-100	10.0%	3
	answered question	**30**
	skipped question	**0**

Question 3:

What particular methods do you apply in your IL classes to get students interested in the topic and become actively engaged? Please select relevant statements, or add your own:

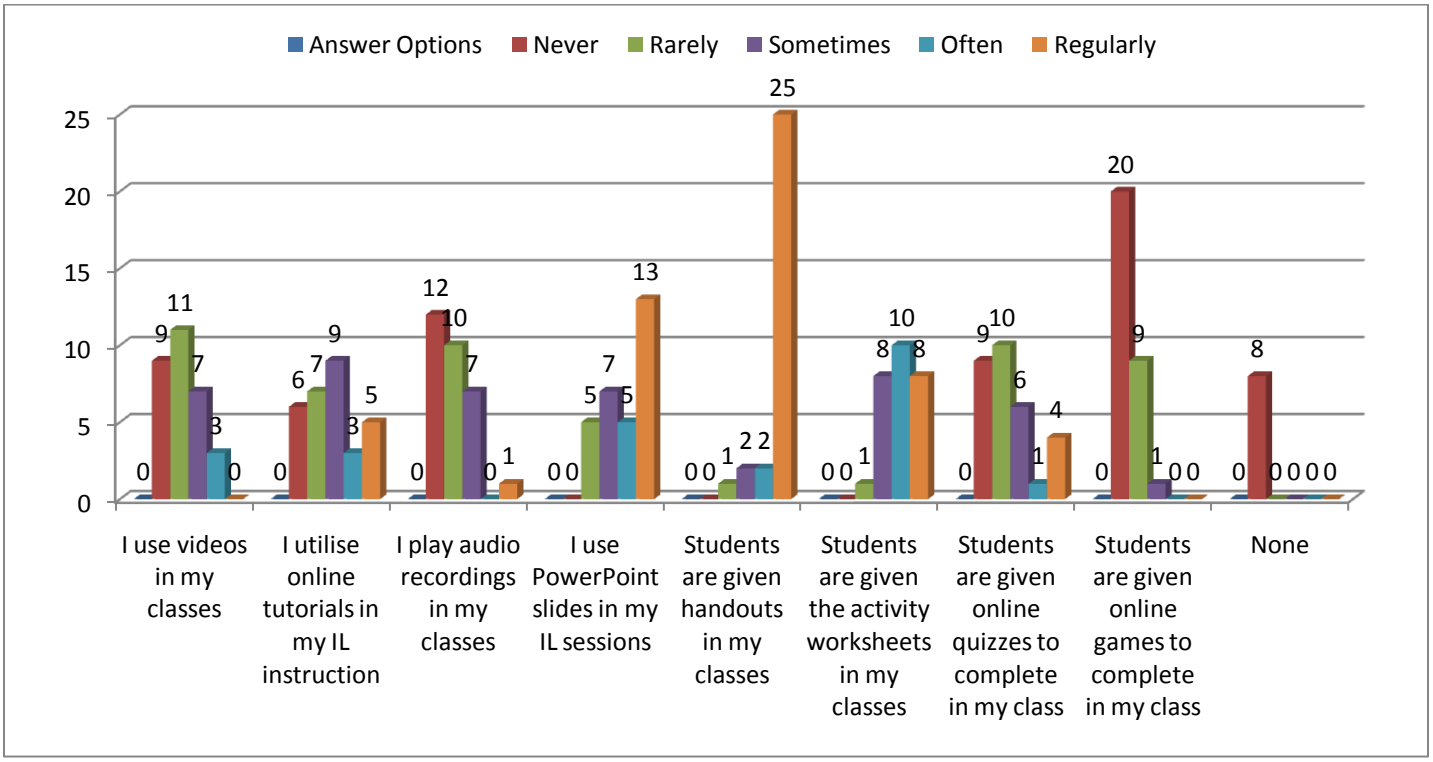
Answer Options	Never	Rarely	Sometimes	Often	Regularly	Response Count
I apply group activities	2	4	13	6	5	30
I apply problem-solving activities	0	3	5	12	9	29
I apply hands-on activities	0	0	0	12	18	30
I facilitate class discussion	0	3	10	9	7	29
I use question/answer method	0	4	7	8	9	28
I use quizzes in my classes	3	5	10	10	1	29
I apply games in my classes	12	13	2	3	0	30
Students in my class work in pairs	3	5	11	9	2	30
I apply ice-breaker activities at the beginning of my classes	4	10	9	7	0	30
I organise role-play activities in my IL classes	17	7	2	3	0	29
I use humour in my teaching	0	1	11	9	8	29
Students are given the role of a presenter in my classes	18	9	1	1	0	29
None	10	0	0	0	0	10
					answered question	**30**
					skipped question	**0**



Question 4:

What types of teaching resources and materials do you use in your IL classes? Please select relevant statements, or add your own:

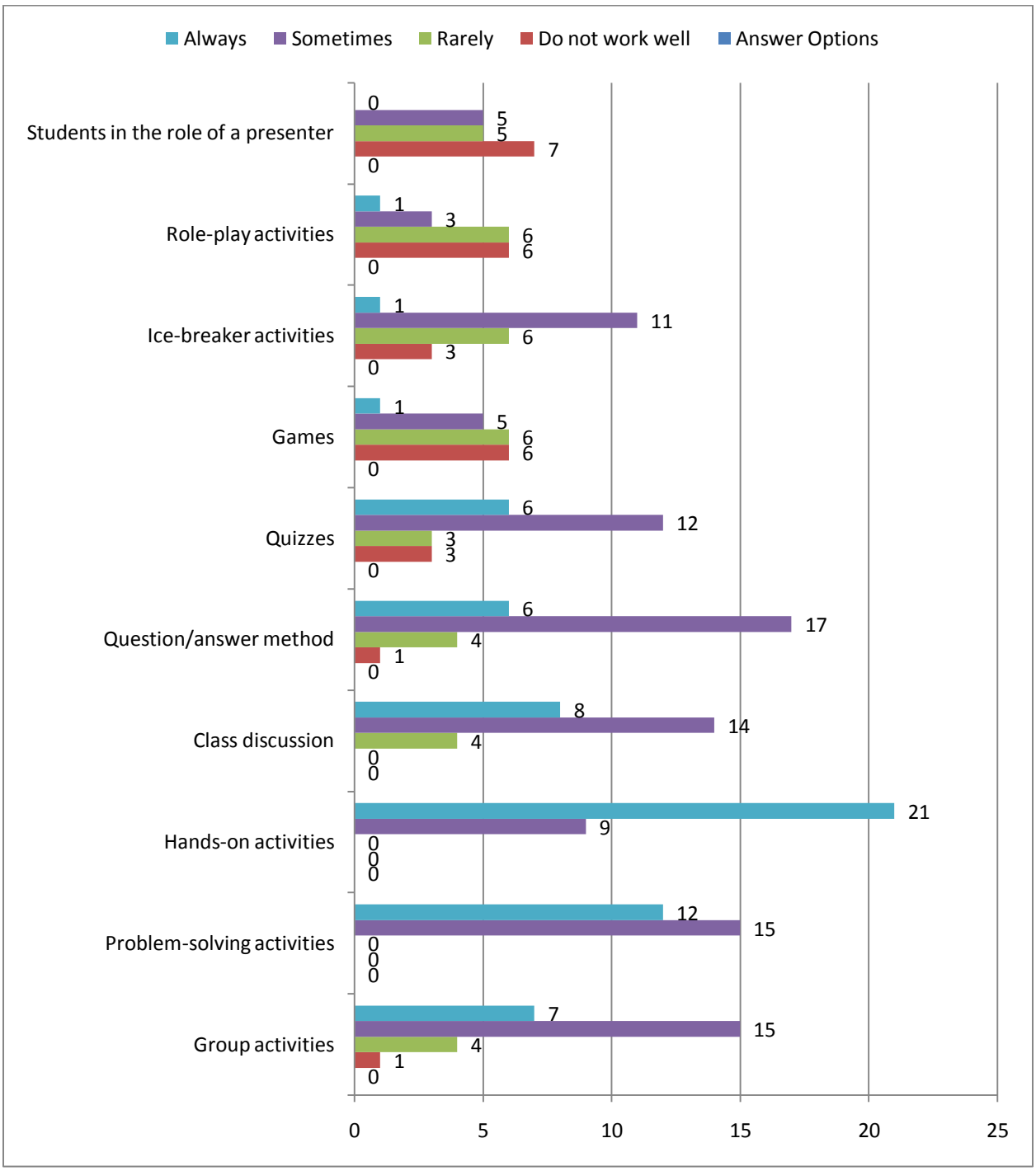
Answer Options	Never	Rarely	Sometimes	Often	Regularly	Response Count
I use videos in my classes	9	11	7	3	0	30
I utilise online tutorials in my IL instruction	6	7	9	3	5	30
I play audio recordings in my classes	12	10	7	0	1	30
I use PowerPoint slides in my IL sessions	0	5	7	5	13	30
Students are given handouts in my classes	0	1	2	2	25	30
Students are given the activity worksheets in my classes	0	1	8	10	8	27
Students are given online quizzes to complete in my class	9	10	6	1	4	30
Students are given online games to complete in my class	20	9	1	0	0	30
None	8	0	0	0	0	8
Other (please specify)						0
					answered question	**30**
					skipped question	**0**



Question 5:

What types of class activities work really well when applied in your IL teaching and which ones do not? Please select relevant options, or add your own:

Answer Options	Do not work well	Rarely	Sometimes	Always	Response Count
Group activities	1	4	15	7	27
Problem-solving activities	0	0	15	12	27
Hands-on activities	0	0	9	21	30
Class discussion	0	4	14	8	26
Question/answer method	1	4	17	6	28
Quizzes	3	3	12	6	24
Games	6	6	5	1	18
Ice-breaker activities	3	6	11	1	21
Role-play activities	6	6	3	1	16
Students in the role of a presenter	7	5	5	0	17
Other (please specify)					0
				answered question	**30**
				skipped question	**0**


Always
Sometimes
Rarely
Do not work well
Answer Options
Students in the role of a presenter
0
5
5
7
0
Role-play activities
1
3
6
6
0
Ice-breaker activities
1
11
6
3
0
Games
1
5
6
6
0
Quizzes
6
12
3
3
0
Question/answer method
6
17
4
1
0
Class discussion
8
14
4
0
0
Hands-on activities
21
9
0
0
0
Problem-solving activities
12
15
0
0
0
Group activities
7
15
4
1
0
0
5
10
15
20
25

Question 6: Please describe your favourite classroom activity and briefly explain why it worked well in your teaching:

Answered question: 24

Skipped question: 6

1. Working through a legal citation problem. Students liked that they need only contribute to a part of the citation, rather than being relied on to provide the whole legal citation. It encouraged classroom contribution and discussion. Feedback from student evaluation forms implied that students also found this exercise valuable.
2. Teaching live, i.e. not depending on PowerPoint slides. The students find it useful as they are learning in the live environment.
3. Students answer questions _ keeps them occupied without me having to talk!
4. Quizzes as students seem to really enjoy the hands-on nature of quizzes and the competitive aspect of them
5. Using real examples from own experience as a student where things have gone wrong. It shows that we understand what it is like to be a student and that there is no "one magic way" of searching to get the right result. It is humorous, encouraging and useful to the student to see this type of thing.
6. Group activities and problem solving activities work well as students seem to enjoy getting to know and working with their peers. Not as intimidating as direct question/answer method
7. Class discussion is my favourite, this helps build a relationship with the individuals in the class and the librarian. It works well as it highlights to me as the tutor exactly where I need to direct the class and also allows the individuals in the class to realize that they are not the only person who needs help.
8. Activity sheets and quizzes
9. Engaging with the students using humour. People relax when they are smiling or laughing and will sometimes even ask questions!
10. Hands-on - keeps their attention well
11. Problem solving exercises work well because the students focus on a specific activity while the intended tutorial content is covered.
12. Hands on activity matching real books with catalogue entries in RILM
13. Peer teaching, students have to work as a group and come up with some pros and cons for using a database and then tell the others
14. Hands on works well as the students feel a part of the whole thing and just not sit and look at the presenter
15. Short quizzes and exercises based on library research tasks. Works well when related to students' real assignments
16. Getting the students to collaborate so they realize how much they already know. It gives them a sense of empowerment and makes them better disposed towards the tutorial.
17. Complex problem statements, requiring students to apply knowledge presented in the teaching session on multiple levels, in order to solve the problem. Reporting back to the class encourages participation.
18. Getting students to come up and demo to the class how they found the answer to a particular library question. Works well for a library overview. Students are motivated to find the answer and they like taking the role of presenter.
19. Best has been team teaching and using humour with the co-presenter to get the message across
20. Class discussion on how what has been learnt could be applied to study - useful because students can see benefit in what they have learnt and think actively about how to apply it.
21. An online quiz where students are asked to identify different types of citations (book, article, chapter etc). Most students thought they'd do well but nearly every student got at least (if not more) one out of 5 wrong. Doing this before the class starts tends to make them listen a bit better.
22. Small classroom -combination of activities and methods
23. Quizzes and problem solving activities - students are active and engaged
24. Having a student provide an example of how they approached the situation and discussion and debate ensued from this. It is fantastic in teaching because it gives buy in by participants as well as providing different avenues of thinking. Broadens the mindset of participants.