An Online Learning Platform for English as a second language for young deaf Indian Sign Language users: usage patterns and user engagement

by

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"E-learning exploits interactive technologies and communication systems to improve the learning experience. It has the potential to transform the way we teach and learn across the board. It can raise standards, and widen participation in lifelong learning. It cannot replace teachers and lecturers, but alongside existing methods it can enhance the quality and reach of their teaching, and reduce the time spent on administration. It can enable every learner to achieve his or her potential, and help build an educational workforce empowered to change. It makes possible a truly ambitious education system for a future learning society."

Towards a Unified eLearning Strategy – DfES (2003)

AUTHOR'S DECLARATION

I declare that the work in this dissertation was carried out in accordance with the regulations of the University of Central Lancashire. The work is original except where indicated by special reference in the text, and no part of the dissertation has been submitted for any other degree.

Any views expressed in the dissertation are those of the author and in no way represent those of the University of Central Lancashire.

The dissertation has not been presented to any other University for examination either in the United Kingdom or overseas.

Signed

Date:

Abstract

This study examines the learning of written English as a second language by young deaf Indian adults on an English Learning Platform. The overriding concern in deaf education has always, of necessity, been basic literacy (Carlson, 1996; Wilbur, 2000). In this study, deaf students in India have been taught by a classroom teacher and use an online learning environment for further instruction and reinforcement. The advent of computer-mediated learning in the last ten years has led to the central function and role of computers as learning aids and this type of learning has garnered a substantial amount of interest.

This research investigates the use of an English Learning Platform (ELP3) as a provision that facilitates and enhances learning for sign language users learning English as a second language (L2) through the signed and the written mediums (Pandian, 2006). Use of an ELP3 environment is complicated by the fact that sign languages rely on face-to-face communication (Johnson & Johnson, 1986), so it is necessary to ascertain whether the lack of face-to-face visual attention and cues in the ELP3 affects learning abilities. Studies of L2 classroom interaction suggest that co-operative and comprehensible interactions facilitate L2 learning (Kitade, 2000).

A statistical study of event log data drawn from the ELP3 and a questionnaire is used here to generate an understanding of how the online platform is used by a group of deaf learners and indicates that they generally like the ELP3 with some preference for certain features. Results of the study demonstrate that the frequency of access to the platform decreased through the duration of the research and the findings indicate a clear preference for signed explanations of topics. In addition, focus group interviews serve to determine deaf students' views of using the ELP3 and suggest that the group consider the ELP3 to be a favourable route to learning English alongside classroom tuition in a blended learning approach. The ELP3 offers potential benefits for L2 learning because it provides a broad range of interactions, involving different levels of proficiency, and these and other issues are considered at length in this thesis.

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1.0 CHAPTER 1 - INTRODUCTION

This study is situated in an English literacy learning environment involving 25 Deaf student participants who use sign language and were from India, Nepal, China, Burundi and Uganda. All of the participants were enrolled at the time of the research onto a university preparatory course at Indira Gandhi National Open University (IGNOU) in New Delhi and the main aim of this study is to see how effectively they make use of the ELP3, an English Learning Platform specifically designed for young deaf sign language users learning English at university foundation level. In the case of this study, one of the concerning aspects is whether deaf people, a collectivist group (Ladd, 2003), would succeed through being engaged in a co-operative learning strategy (Felder, 1995; Cohen, 2002; Pandian, 2006) that is not face-to-face, given a traditional cultural bias in India against independent learning (Zeshan, Vasishta and Sethna, 2005). Through an ELP3 log data report, a questionnaire and focus group interviews, this research aims to examine how the features of the ELP3 are used independently by students and to capture the views of the students with regards to using the ELP3 as an instructional tool.

The issues related to literacy for deaf people have continued to be a mystery for educationalists for the last 200 years (Carlson, 1996; Wilbur, 2000). With advancing technology, deaf people's preferred language, sign language, has never been better equipped for use alongside English, or for that matter any written language, due to the advent of asynchronous online study through a learning management system. The ELP3 offers potential benefits for second language learning because it provides a broad range of interactions involving different levels of proficiency, e.g. between native speakers and non-native speakers, or among non-native speakers (Kitade, 2000).

This study explores both the usage patterns displayed by the participants using the ELP3, and the views they express about engaging with the ELP. Thus there are two key questions to answer:

1) How do deaf students use the features of the ELP3?
2) How do deaf students view the ELP3 as an instructional approach?

The first research question aims to explore how the features of the ELP3 are used by the students. With a particular focus on frequency of use, the question enables the researcher to look for patterns of usage and consistency of access to the platform through the duration of the study. The second research question aims to elicit the views of the students regarding the use of the platform, and attention here is paid to the ease and effectiveness with which the platform is used.

Chapter 2 helps the reader to understand the current situation for deaf people in India and the cultural and historical context of this research. This section provides a brief background of deaf people in India, including attitudes to deafness, sign language use, the increasing importance of English, the development of deaf education in India and the target group itself. Estimated statistics regarding the number of deaf people in rural and industrialised regions, and the estimated percentage of those who use Indian Sign Language (ISL) as their preferred method of communication, provide a demographic picture of the deaf community. This status of ISL and the amount of regional variation is also described. Furthermore, information regarding the target group in this chapter includes an account of the new developments at Indira Gandhi National Open University and its newly formed Bachelor Preparation Programme for Deaf Students. The section then details the current situation for deaf people in India with regards to the use of IT and online learning platforms, and also explores the role of information and communication technologies and the use of Moodle software.

The methodology chosen for this research is illustrated in Chapter 3, which comprises both qualitative and quantitative approaches that enable exploration of both research questions. The chapter is divided into five sections. The first gives an introduction to the study context, including a general overview of the English Learning Platform. The second helps the reader gain a clearer understanding of the technical aspects of this research, by describing the English Learning Platform 3 (ELP3), its features and content, and how the data were retrieved from it. The third section explains the research design, triangulation and methodologies, and describes the pilot test that was completed prior to the main research activities and the problems that this highlighted. The fourth section provides a description of the sources and procedures for data collection and describes the data analysis methods, detailing the nature of the quantitative data, which is comprised of automatically-generated data from the ELP3 and coded data from a Likert-scale questionnaire. This final section also covers the qualitative methodologies, which include interviews.

Chapter 4 presents the findings from the analysis of the event log data, questionnaire and interviews. After discussing in detail the extent to which the features of the ELP3 are used by the participants, and illustrating the participants' views towards the platform, the section summarises the findings and results as a whole.

Finally, Chapter 5 concludes this study with some reflections on the findings, including the intrinsic potential of the English Learning Platform. It also discusses some of the weaknesses that arose from the experiences of the participants and their implications, and the limitations of the study. This chapter concludes the thesis by considering the issue of deaf literacy in the online arena and offers suggestions for future research based on the experiences of this project. Above all, the preferences and dislikes of the participants and their views regarding the tools are of prime importance.

2.0 CHAPTER 2 - BACKGROUND

To help the reader understand the current situation for deaf people in India and the cultural and historical context of this research, this section provides a brief background, including attitudes to deafness, sign language use, the increasing importance of English, the development of deaf education in India and the target group itself. Estimated statistics regarding the number of deaf people in rural and industrialised regions, and the estimated percentage of those who use Indian Sign Language (ISL) as their preferred method of communication, provide a demographic picture of the deaf community. Information regarding the target group includes an account of new developments at Indira Gandhi National Open University and its recently created Bachelor Preparation Programme for Deaf Students. An introduction to Moodle software completes this chapter.

2.1 Deaf People in India

2.1.1 Statistics

Due to the absence of any formal census or national office responsible for the gathering of population statistics in India, accurate numbers of deaf Indians are not currently available. However, Zeshan (2007a) has presented some estimated statistics, based on average percentages in developing countries, where 2 people in every thousand (2 o/oo) of the population are estimated to be deaf and 10 people in every thousand (10 o/oo) are estimated to be hard of hearing (HOH). This depicts the following statistical situation of deaf and hard of hearing people India-wide and leads to an estimation of the potential number of sign language users in larger towns and cities.[1] The figures exclude deaf and hard of hearing people living in rural parts of India, as they do not have access to sign language due to isolation.

Statistics:

Deaf and hard of hearing (HOH) people in India:

deaf people total:	2 o/oo out of 1 billion	2,000,000 people
HOH people total:	10 o/oo out of 1 billion	10,000,000 people

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[1] The percentage of deaf and hard of hearing people living in urban areas who are sign language users is based on an estimated assumption that "60% of deaf people in urban areas, but only 25% of hard of hearing (HOH) people, are actual sign language users" (Zeshan, 2007a).

Actual sign language users (estimate):

deaf:	60% out of 800,000	480,000 people
HOH:	25% out of 4,000,000	1,000,000 people
total number		1,480,000 people

(Zeshan, 2007a)

The statistics, then, indicate a large number of sign language users across the country and may, in fact, be estimated at a greater amount, depending on the assumed incidence of deafness. Sahasrabudhe (2010), for example, draws an estimated number of people with a hearing loss from a large scale World Health Organisation survey, which estimates the figure to be an average of 6% of the population. According to Sahasrabudhe, "..applying this to the current estimated population of India, this means that there are approximately 70.4 million deaf and hard of hearing people living in India in 2010". A larger total number of deaf and hard of hearing people will naturally lead to a higher amount of sign language users, though this study proceeded on the basis of the figures estimated by Zeshan.

2.1.2 Historical Attitudes towards Deaf People

Historical attitudes toward deaf people in India can be seen in Hindu texts, such as the ancient legal tome *The Law Code of Manu* and the epic poem *The Mahabharata* (Olivelle, 2004, cited in Dennis, 2005: 8-10). The former states that deafness was the karmic result of sinning in past lives, that deaf people are not allowed to inherit property, and that they are untrustworthy, despicable and sub-human (ibid). *The Manhabharata* also asserts that deafness is due to wrongdoing in previous lives, and characterises deaf people as having 'evil conduct' and 'sink[ing] in Darkness', but explains that through good behaviour and humble acceptance of their deafness they may be redeemed and ascend through the stages of karma to become hearing (Ganguli, cited in Dennis, 2005: 10). *The Manhabharata* seems to take a more inclusive stance toward deaf people than *The Law Code of Manu* and permits their involvement in memorial rituals (ibid: 11). However, Hindu folktales that mention deaf people echo the view that they are low on the karmic ladder, attributing to them negative characteristics, such as

stupidity and stubbornness. Another ancient Indian text offers a physical, rather than spiritual or karmic, explanation of deafness (Wujastyk, 2003: 24, cited in Dennis, 2005: 12). Susruta's *Compendium* states that deafness is caused by wind, sometimes with phlegm, stuck in "the tubes which carries [sic] sound" (ibid).

Generally, then, the attitudes to deafness were persistently negative throughout most of India's history, even though many deaf people worked as royal servants and guards during Mogul times, and some villages had a high number of deaf people due to iodine deficiencies in certain areas across the Himalayas (Miles, 2006, cited in Kusters, 2007: 87). These attitudes still had not changed very much by the Victorian era, as the 1833 journal of Englishman Thomas Skinner attests (in Dennis, 2005: 14-15). He describes visiting a village where intelligent, lively deaf boys were considered to be idiots and fools by their own parents, and intimates that this kind of attitude commonly causes depression and even suicide in deaf people. Thus, the context in which formal deaf education began just a few decades later was a highly challenging one. This was not only the case in India of course; several other cultures have also interpreted deafness as indicative of stupidity, sub-human status, or spiritual retribution.

2.2 Sign Language in India

Sign languages are "the natural visual-gestural languages of deaf communities, using the hands, facial expressions, and head and body positions to convey linguistic messages" (Zeshan, 2007b: 269). Indian Sign Language (ISL) remained academically unexamined until 1978, when Vasistha, Woodward and Wilson wrote that educators' linguistic ignorance of it was suppressing its use in schools. They surveyed Indian signers across four large cities and found that the language they used was lexically and grammatically consistent enough to be considered one language, albeit with regional variation (Vasistha et al., 1978: 1). Later, Zeshan (2000) found that in several locations in Northern India and Delhi, ISL and Pakistan Sign Language were one and the same language (Indo-Pakistani Sign Language, or IPSL). Further research also discovered that the ISL used from city to city is very similar, with only 25% vocabulary variation, and therefore ISL can be considered "an indigenous pan-Indian sign language" (Zeshan & Panda, 2005).

At present, most studies have surveyed only signers in urban areas, 40% of whom have some access to ISL, e.g. through schools (Zeshan & Panda, 2005). Sign language is the defining feature of the deaf community, and to understand the centrality

of language to culture and social identity, Gumperz's analysis is particularly illuminating: "language has fundamentally three roles in bonding a group of speakers to one another and to their culture. It is a symbol of social identity, a medium of social interaction and a store of cultural knowledge" (cited in Lane, Hoffmeister and Bahan, 1996: 67). Lane, et al. (1996) points to research where deaf and hearing people had to generate and rotate images, assemble blocks, recognise faces, detect peripheral movement, and integrate rapidly presented visual information. The findings show that native sign language users have a distinct advantage over hearing people in performing these tasks which, according to Lane, et al., substantiates the idea of deaf people as truly 'visual people'.

2.3 Deaf Education

2.3.1 The History of Deaf Education

Deaf education began before India's independence, at a time when many deaf people were beggars, openly jeered at and mocked in public, and widely thought to be uneducable (Dennis, 2005: 17). In this climate, European and Indian women set up mission schools and orphanages for deaf children in India as early as the 1830s (Miles, 2006, cited in Kusters, 2007: 87), and formal deaf education began when Christian missionaries founded the Bombay Institution for Deaf-Mutes in 1885 (Dennis, 2005: 18). While the mission schools used spoken and signed communication, the formal deaf schools used only the 'oral' approach (ibid). This was likely due to the influence of Americans and Europeans on deaf education in India (Zeshan & Panda, 2005, cited in Kusters, 2007: 87), and the fact that its first deaf school was founded just five years after the infamous 1880 Congress of Milan, which adopted the resolution that speech had "incontestable superiority over signs" and would henceforth be preferred to signs in deaf education (Van Cleve & Crouch, 1989: 110, cited in Dennis, 2005: 19). Deaf people's views on 'oral versus manual' education are difficult to find in the literature, but one successful deaf student said that she wished she had had access to education in sign language (Rajeswari, 2000: 8).

By 1939, there were 26 schools at which deaf pupils could be educated (Bhattacharyya, 1939: 21), many of which were still open in 1988 (Vohra, 1998). Although the government provided partial funding for a few schools, most were privately operated (Banerji, 1898: 19). Some deaf school graduates stayed there as teachers, which probably helped to transmit deaf culture and deaf identities from

generation to generation. But overall, prior to independence, only a very small proportion of deaf Indians had the opportunity to be educated because it was not perceived as economically beneficial to do so (Dennis, 2005: 25). Around 1900, this proportion was 0.02 per cent (Banerji, 1898: 18) and by 1939 it had risen slightly to 0.3 per cent (Bhattacharyya, 1939: 5). After 1947, when India gained independence, most deaf people were still unable to access education, and sadly they were still considered lower human beings of little worth or consequence (Dennis, 2005: 27). Although the educational rights of people with disabilities were specified in India's Constitution (Mehta, 1980, cited in Dennis, 2005: 28), they were not listed under 'Fundamental Rights', and although the government wanted free education for all children by the 12th anniversary of independence, deaf people still have not benefited from this (Verma, 1999: 48). Bhagwat (1982) reports that the mainstream policy of integrating deaf children into local schools has not been effective, possibly due to a tradition of teaching deaf children to repeat information rather than to understand it (Khan, 1953: 241; Taylor & Taylor, 1970: 209). Furthermore, education in specialist schools is limited by an insufficient number of schools and inadequate teacher training (Dennis, 2005: 33).

In the late 1980s, greater linguistic recognition of sign language influenced Deshmukh (1996) to begin advocating the use of sign language and bilingualism in Indian deaf education, starting with the school he had founded in 1981, the Rotary School for the Deaf (in Dennis, 2005: 39). Others such as Gopalakrishnan (2000), a deaf man, have also encouraged bilingual education and argued that the government should support this (Gopalakrishnan, 2000, cited in Dennis, 2005: 39-40). More recently, Panda (2007) reported that India had 550 schools for deaf pupils; the majority of these still follow the oral system, and most are day schools that offer just primary education, though a few are residential schools (cited in Kusters, 2007: 87-8). Nonetheless, the efforts of sign linguists like Zeshan, and bilingualism advocates like Gopalakrishnan and Deshmukh, have led to the use of sign language(s) in some schools (Miles, 2006) such as a secondary school in Indore (Kusters, 2007: 88).

2.3.2 Recent Developments in Deaf Education

The lifelong educational prospects of urban deaf people in India, especially in Mumbai and New Delhi, have improved in the last five years, as opportunities for deaf people to undertake further and higher education have begun to open up. This section discusses the sources of some of these opportunities.

2.3.2.1 Ishara Foundation at Mumbai

The Ishara Foundation[2] was established in December 2005 by a group of deaf and hearing professionals in Mumbai. Ishara's main aim is to improve the educational achievement of deaf children and adults in India. They are currently establishing educational networks in order to run continuing education classes, distance education programmes, and literacy improvement courses. All of their courses are taught using the medium of Indian Sign Language. The Ishara Foundation is run mainly by deaf people; therefore it is able to provide programmes for deaf people, led by deaf people, in an environment where all participants understand the importance of self-respect, culture and the sign language of the Indian deaf community.

The Foundation's ultimate goal is the setting up of full-fledged tertiary education streams for deaf students. They are associated with a number of national and international organisations and individuals who are closely involved with the field of bilingual-bicultural education programmes for deaf people. Ishara has begun teaching at a number of deaf schools in Mumbai, which ordinarily follow the oral method of teaching. However, perhaps inspired by Ishara's bilingual philosophy, a number of schools have invited Ishara to conduct English classes using deaf teachers, sign language as the mode of communication and English as the second or written language; thus a bilingual mode of formal teaching exists in India for what is likely the first time in history. Years ago, teachers who were themselves deaf taught vocational education courses, such as sewing, knitting, drawing, etc., but Ishara has advanced the notion that deaf teachers are also able to teach other school subjects.

2.3.2.2 Sign Language Studies Programmes at Indira Gandhi National Open University

Indira Gandhi National Open University (IGNOU) is an Indian university offering distance education through a network of learning centres in India and other countries. One of IGNOU's main aims is to make tertiary education accessible to disadvantaged sections of society and those traditionally under-represented at university level. The University of Central Lancashire's research institute, the International Institute for Sign Languages and Deaf Studies (iSLanDS), works in partnership with the Staff Training and Research Institute in Distance Education at IGNOU on the Distance Education for

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[2] http://www.isharafoundation.org/ as accessed on 28th September, 2011

Sign Language Users project. In addition, a university access programme, the Bachelor Preparation Programme for Deaf Students (BPPDS),[3] was established in 2009. In this programme, a special bridging course developed at the iSLanDS Institute qualifies deaf students for university entry. This course is the first of its kind in India. In 2010, it established its first ever undergraduate programme, the Bachelor of Arts (BA) Applied Sign Language Studies (BAASLS). This is a dual award programme jointly offered by IGNOU and the University of Central Lancashire (UCLan), upon completion of which students receive the benefit of dual certificates. This research is based on the first cohort of the BPPDS, which is discussed in more detail in section 2.3.2.3 below.

2.3.2.3 Preparation Programme for Deaf Students at Indira Gandhi National Open University (BPPDS)

The Bachelor's Preparation Programme for Deaf Students (BPPDS) was developed for deaf people for whom English is a second language. The programme is intended to be completed by students prior to their enrolment on the Applied Sign Language Studies degree course, and it provides deaf students with an introduction to the realities of study at Higher Education (HE) level. Additionally, the BPPDS programme aims to compensate for deficits in the areas of literacy and general study skills (Barnes, Harrington, Williams and Atherton, 2007). In other words, this foundation entry course is carefully designed to help students, whatever their background, to understand and prepare for successful undergraduate study (Quinn & Nunn, 2007). This issue is particularly relevant to the UK setting but could also apply to India. Since the advent of the Internet, English skills are zealously pursued by people all over the globe. Deaf people in India have a particularly great need for the Internet as a means of accessing information, because radio, television and everyday spoken communication are mostly inaccessible to them (Dotter, 2009). In India, deaf learners' acquisition of English has long been hampered by teaching practices focusing on memorisation and parroting at the expense of genuine understanding (Zeshan 2005, cited in Kusters, 2007: 91-2). The use of other languages such as Marathi also means that deaf learners are less likely to acquire English (Kusters, 2007: 92). Thus, there is a major English language component in the BPPDS course, which aims to improve the students' level of reading and writing, but the programme has no oral/spoken English components.

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[3] http://webserver.ignou.ac.in/SIGN%20LANGUAGE/course.html as accessed on 28th September 2011

2.4 Deaf People and Information and Communication Technologies

2.4.1 The Role of Information and Communication Technologies

There are several information and communication technologies (ICT) devices and protocols that are being used by deaf people in the information society we live in. The gap between the developed and underdeveloped countries is in some ways shrinking because of the power, attraction, affordability and usefulness of ICT. It is a well-recognised fact that information leads to power and that the revolution brought about by ICT is reshaping the future. Multiple ICT choices are available for deaf people and these services include text phone, text relay, text messaging, e-mail, instant messaging, online chats, fax and video telephony in the UK. Video relay services are also available over the Internet in Britain. Online video chat software, such as Skype, ooVoo and Apple's FaceTime are popular as well. The number of similar services is rapidly growing in other parts of the world.

Deaf people are increasingly finding new ways to access ICT by using Internet resources and this engagement is crucial for the development of their education and knowledge. In fact, as Hilzensauer (2006) suggests, ICT has become a vital factor in enabling deaf people to achieve educational goals and naturally forms an accessible medium for creating, presenting and using multimedia materials, including sign language videos. Furthermore, the fact that deaf people comprise an extreme minority (about 0.l-0.3 per cent of the population, Dotter, 2009) renders distance education as a most effective means of accessing knowledge and training that might otherwise be impenetrable.

The use of Learning Management Systems (LMS) has also encouraged online engagement for deaf people. Learning Management Systems, such as Blackboard, WebCT and Moodle, complement the traditional classroom teaching and the e-learning aspect, and it has been possible to identify great possibilities for their use in language learning. The learning can take place in the form of simultaneous or 'real-time' (synchronous) communication using chat, where the students are required to be online at specified times, or it can be stored and accessed when teacher or learner is ready to communicate through web-based (asynchronous) instruction (Bates, 2005). Asynchronous learning, then, occurs when the interaction between the instructor and students is not constrained by time and place. However, the accessibility of e-learning and distance education systems for many deaf people is dependent upon developments

of video technology in ICT via sign language, so the direction that video technology takes may move toward exciting developments that enhance the learning opportunities and developments for deaf communities world-wide. But it should be noted that the availability and rapid expansion of ICT does not indicate the level of quality of the learning experience, and delivery should be foremost integrated with the expectations of the users, as Neumann proposes:

> 'Technology often fails to deliver results, but in the creation of e-learning environments, we are its driver. If we understand how the barriers to inclusion are being created in the profligacy of spending on and acceptance of poor and narrow-minded design, then we can challenge our mindsets and apply consideration to the additional needs of disabled students.'
>
> (Neumann, 2002, cited in Williams & Hodgson, 2007:182-183)

2.4.2 The Online Learning Platform and Deaf People

The advent of e-learning and online learning platforms, then, has altered the way that deaf education has developed in the last ten years, resulting in an explosion of educational technologies for deaf people. Numerous studies across Europe and the US have commended the resulting opportunities for deaf people to now interact with course tutors and peers directly, without the need for an interpreter, and have recognised the significance of distance learning technologies. For instance, a study by Long, Vingare, Rappold and Mallory (2007) at Rochester Institute of Technology (RIT), indicated positive student interactions and a great satisfaction with instructional delivery in 'blended learning' courses where online communication is incorporated into traditional lecture classes.

Blended learning is learning that is facilitated by the effective combination of different modes of delivery, models of teaching and styles of learning (Heinze & Procter, 2004). Teaching environments now use computers to enable interaction between deaf and hearing participants, and facilitate access to communication based on 'co-operative learning' (Wang, 2006; Pandian, 2007). Cohen (2002) describes this as learning while being engaged in a creative open-ended task, talking and working with fellow students. This learning should naturally benefit the target group of this study, as they are part of a 'collaborativist' assembly that deaf culture relies on (Ladd, 2003; Lane, et al., 1996).

The success and efficacy of multimedia approaches is also reported in Lang & Steely's (2003) study of asynchronous web-based learning of science subjects at the Oregon Centre for Applied Science in the US. In a comparative study of web-based, multimedia learning with traditional classroom experiences, the researchers report significant benefits from the first approach. Mertzani (2006a) also reported positive results on asynchronous teaching and learning between a deaf teacher and hearing learners studying British Sign Language (BSL) as their second language at the University of Bristol. The teaching and learning of BSL during this project was mediated through online learning software, Panda (Mertzani, 2006a). This software allows very easy recording of video (and audio) and quickly compresses it into a suitable format, requiring minimal storage space. With reference to the present research, it can conversely be postulated that ICT can benefit the teaching and learning of written English as a second language through sign language video materials and online learning software. (Straetz, Kaibel, Raithel, Specht, Grote and Kramer, 2005). Information related to similar projects can be found in Appendix 4.

2.4.3 UK-India Education and Research Initiative Project

UCLan and IGNOU's UK and India Education and Research Initiative Project[4] (UKIERI) has systematically developed explorative approaches to distance education in the sign language medium, both in terms of curriculum approaches and in terms of harnessing the latest technical resources. India and the UK have a joint interest in the development of such approaches and programmes, though for different reasons. In the UK, the deaf sign language using community is shrinking and increasingly becoming scattered due to educational developments. Deaf students thus often find themselves without the support of a sign language using community and have limited access to teaching through sign language; in India, the reverse situation creates similar problems: the number of Indian deaf signers is so large that it is impossible to provide enough qualified teachers who can sign. A common strategy towards solving these problems has to make use of innovative educational provisions and technologies, and this is where distance education and e-learning play a key role. As there is a scarcity of Indian Sign Language (ISL) resources, such as ISL-trained teachers and video materials that offer ISL instruction, a large number of deaf people in India are not benefitting from

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[4]

http://www.uclan.ac.uk/schools/journalism_media_communication/islands/islands_research_themes_deaf _literacy_india.php as accessed on 28th September, 2011

literacy programmes operating with a bilingual approach. Online learning was chosen for this study, as it is the best solution currently available for teaching English to large numbers of young deaf adults. Development of this strategy and research on its technical and educational implementation are at the core of this project.

The UKIERI project is unique in that it involves co-operation between research groups based both in universities and in grassroots foundations of deaf communities. Moreover, this is a multi-disciplinary undertaking that brings together specialist expertise in sign language linguistics, social studies, special education, media studies, deaf studies, distance education, and mass media technologies. In the course of the project, teaching materials and curricula are developed and then field-tested in real-life situations in both countries. Research on the viability and effectiveness of the learning experience is carried out, and identifying strategies for dissemination and sustainability is an integral part of the project. Throughout the UKIERI project, sign language video content was produced in filming studios at the iSLanDS Institute in the UK, the Inter-University Consortium at IGNOU, and the Ishara Foundation in Mumbai by the research team (see Appendix 5).

2.4.4 E-Learning and Blended Learning

For deaf people, it is crucial that the learning environment is accessible and is one where learning can take place as naturally and interactively as possible. Traditionally, many educational environments across the pre-tertiary and tertiary sectors have seen deaf people in classrooms with limited access to the teacher and peers who operate in the spoken language, leaving the isolated deaf person reliant on lip-reading or on the support of technical equipment that only serves to enhance sound. This situation is often thought to be relieved by the presence of a human support worker, ordinarily referred to as a Communication Support Worker (CSW) in Further Education and a Sign Language Interpreter in Higher Education in the UK context. While the CSW may provide valuable support to the student in terms of accessing text books and articulating written English, they are usually not a trained sign language interpreter and large parts of classroom conversation still remain inaccessible to the student or are subject to a minimum level of interpretation. This does not enable the student to access the learning environment on an equal footing to their hearing counterpart and the nature of any level of interpretation that the CSW/Sign Language Interpreter can provide may still result in a situation where the deaf student does not feel fully able to participate and is not

learning via his or her natural language. Long and Beil (cited in Long, Vignare, Rappold & Mallory, 2007) found that deaf students often feel left out of the conversation, receiving information later than the hearing students and feeling unable to contribute in traditional classroom environments.

Given the situation in traditional classroom settings, it is understandable that the innovative teaching and learning methods that online learning platforms provide should be of utmost interest to the deaf community. With online platforms, there is no 'live speaker' in the form of a traditional teacher and discussions occur at a more readily accessible pace. There is more of an equal opportunity to ask questions and to prepare a response with the control that online learning platforms afford the user. If not an effective replacement for traditional classroom learning, online learning is most certainly a beneficial addition to the classroom. This comes in the form of 'blended learning', a method that makes use of both classroom and online facilities. The increasing use of courseware management systems has made blended learning an option in some higher education institutions, and it is now occurring under a variety of models. Long et al. (ibid) outline the Rochester Institute of Technology's model of blended learning:

> 'The Rochester Institute of Technology (RIT) Online Learning instructional model defines a blended course as any course in which approximately 25 percent to 50 percent of classroom lectures and other seat time are replaced by instructor-guided online learning activities such as virtual team projects, synchronous chat sessions, and asynchronous discussions.'

> (Long and Beil, cited in Long, Vignare, Rappold & Mallory, 2007)

3.0 CHAPTER 3 - METHODOLOGY

This chapter presents the theoretical background to the research and a description of the methodology, which comprises both qualitative and quantitative approaches. The chapter begins with an introduction to the study context, including a brief explanation of the English Learning Platform 3 (ELP3). The features and content of the platform are then described, helping the reader to gain a clearer understanding of the technical aspects of this research. The chapter also details the research design, triangulation and methods, and describes the pilot test completed prior to the main research activities and the problems that this highlighted. A description of the sources and procedures for data collection is then provided and a section on data analysis explains the nature of the quantitative data, which are comprised of automatically-generated data from the ELP3 and coded data from a Likert-scale questionnaire. Lastly, the chapter covers this study's qualitative method, i.e. interviews.

3.1 Study Context

3.1.1 The English Learning Platform an Instructional Approach

During the development process, the Principal Investigator for the ELP3 (Professor Ulrike Zeshan, the Head of the iSLanDS Institute) and the Co-Investigator (Sibaji Panda, lecturer and ELP3 course instructor) decided to move away from the "explicit instruction approach" (Doughty & Long, 2003) that had been used in the teaching of English on the ELP1, a previously-designed basic level online learning platform. The explicit instruction approach was used to demonstrate to learners how English grammar works and to aid the development of metalinguistic knowledge (Hilzensauer, 2009; Sahasrabudhe, 2010). Macurova (2004, cited in Hilzensauer, 2009) states that 'thinking and making oneself understood is more important than speech performance – and … the development of literacy of the deaf is ultimately more important than the development of spoken language'. Therefore, in effect, English learning should at least start with the written element of the language, taught through sign language.

The language of instruction used in this project is Indian Sign Language, the first or preferred language of both of the target groups. This was a key requirement in order to make sure that the course was fully accessible for the target groups. As Bailes (2001, in Sahasrabudhe, 2010) notes, by first focusing on a known language, in this case

ISL, and subsequently "connecting and comparing this growing knowledge to the forms, structures and use of a written second language, it is possible to foster connections between the languages that would result in English literacy". For this reason, the research proceeded with an approach in line with Communicative Language Teaching, a method used in the field of Teaching of English to Speakers of Other Languages (TESOL) (Richards and Rodgers, 2001) and more specifically according to the principles of a Presentation-Practice-Production (PPP) method (Richards and Schmidt, 2002), which appeared most suited to this English Learning Platform. Here, the target language form is presented in text and then practiced in a number of controlled exercises; the discussion board provides the avenue for the production of the target language. While previously untested, the syllabus is specifically grammar driven and taught through explicit analysis of themed content, as described in section 3.2.3 below; the signed element was added for the purpose of ensuring that the learners understand the content.

The content of both of the courses, ELP1 and ELP3, has been determined with broad reference to the Common European Framework of Reference for Languages (CEFR), as was the case with the SignOnOne and SignON! projects (see Appendix 4) and provides an avenue for investigating the research questions. The CEFR comprises different levels. The A1 of the CEFR corresponds to basic language user at the 'breakthrough' level, comparable to the level of the ELP1, while the ELP3 is similar to CEFR's B1, which is an independent language user at the 'threshold' level. The B1 level of English was in compliance with the Entry Level requirements for the BAASLS course (see section 2.3.2.2), which is at IELTS[5] level 4.5. At both levels on the ELP1 and ELP3, only a minor amount of material has been added in the current stages of the online platform development, which means, for example, that those who completed the ELP1 had only covered a small fraction of the material needed to complete the A1 level.

As Batson & Peyton (1986) suggest, serious efforts to develop a naturalistic use of English in deaf students have resulted in multifarious communication approaches: speech reading, audio-loops, teletype (TDD) machines, overhead projectors, Signing Exact English, English fingerspelling, Cued Speech, the Autocuer (eyeglasses with

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[5]IELTS is the International English Language Testing System, it was one of the pioneers of four skills English language testing over 21 years ago, and continues to set the standard for English language testing today. IELTS is jointly owned by British Council, IDP: IELTS Australia and the University of Cambridge ESOL Examinations (Cambridge ESOL) through more than 800 test centres and locations in over 130 countries. http://www.ielts.org/about_us.aspx as accessed on 28th September, 2011

signaling mirrors), and Real-Time Subtitling. Many communication methods, including the latest Information and Communication Technologies such as mobile phones and the internet, have been tried over the years with little notable impact. The real problem that deaf students face is not a lack of hearing but rather a limited exposure to English (Carlson, 1996). Therefore, this research investigates the extent to which deaf students view the use of an ELP3 as part of a 'blended' environment for learning English and how they engaged with it.

3.2 English Learning Platform 3 (ELP3)

3.2.1 Development of the ELP3

The UKIERI project's English Learning Platform consists of two target groups:

1. The basic level English Learning Platform (ELP1) - mainly designed as a distance learning courseware aimed for the teaching of beginner-level English to deaf people from the Mumbai and New Delhi deaf community, with sign language as the language of instruction (see *Figure 3.1*, below):
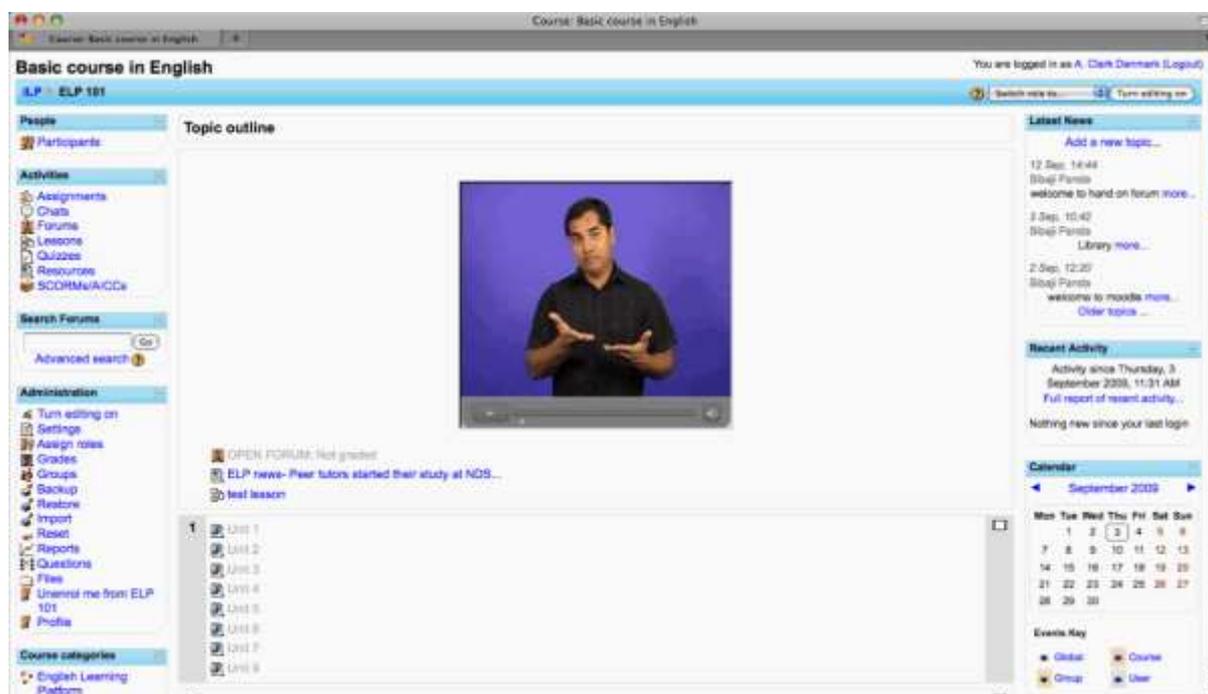
Figure 3.1. The main page of the ELP1, basic level English Learning Platform

2. The intermediate level English Learning Platform (ELP3) - developed as a more advanced platform in September 2009 after completion of the ELP1 the year before (see *Figure 3.2*, below):

Figure 3.2. The main page of the ELP3, the intermediate level English Learning Platform

Both platforms, as online courses, are accessible to internet users in any location; the ELP1 and ELP3 enable distance learning but they have remained a closed resource, as users must have allocated log-in details from the course technician, so that the model could be refined by the course development team at any point. In this study, the ELP3 is seen as an online learning platform rather than a distance learning platform, of the type that the ELP1 was based on, as it was designed to work with a BPPDS classroom-based module as part of blended learning.

3.2.2 Technical Features

At the University of Central Lancashire (UCLan), the main virtual learning environment (VLE) at the beginning of this study was WebCT.[6] However, it is a commercial tool and as such, only registered students can use it. Therefore, the project partners decided to use Moodle, a free and open source learning tool (also known as a Course Management

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[6] WebCT (Course Tools) or Blackboard Learning System, now owned by Blackboard, is an online proprietary virtual learning environment system that is sold to colleges and other institutions and used in many campuses for e-learning.

System (CMS) or Learning Management System (LMS)) that can perform as well as commercial platforms. It has a substantial advantage in that project members can control who is registered on it, whereas only UCLan faculty staff were permitted to control WebCT environments. The ELP3 is relatively well-protected and any infiltration will not affect the UCLan network. Moodle is suitable as a platform for the ELP3 because it is relatively easy to set up and adapt to a particular class. Furthermore, it has many features beneficial to an English course, such as online forum and chat rooms, facilities for sharing materials, uploading assignments and feedback, grading, creating a glossary and monitoring students (see Wada, 2006).

3.2.3 Content Organisation

The ELP3 is comprised of several modules, or units, each covering a topic or two of English grammar. These modules are based on the ones initially created by the team and it is intended that the ELP3 will eventually add more modules to complement the class sessions. As of October 2009, there were 5 units, each with complete sets of signed presentations of an explanation of a topical item, practical activities on specific grammatical categories and further reading on specific grammar topics. The researchers devised various types of graded exercises for two of the units in SCORM[7] format, which includes true/false, matching and multiple choice tasks. They have endeavoured to use as many types as possible to avoid repetition within the two units and to stretch learners' English skills. *Table 3.1* below illustrates the build-up of the ELP3 courseware.

Content added on:	Unit/Pages or other item(s)	Topical item	Grammar topics	External practice topical reading	External grammatical practice websites
August 5, 2009	Unit 2 Pages 1,2,3,4,5 and 6	Language Acquisition (talking about how people learn language)	Page 3 Adjectives in the text Page 5 Clause connectors	✓	✓

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[7] SCORM is a set of technical standards for e-learning software products. It governs how online learning content and Learning Management Systems (LMSs) communicate with each other.

September 17, 2009	Unit 1 Pages 1,2,3,4,5,6 and 7	The Cell as a Busy Factory (talking about the role of cell as a functional basic unit of life)	Page3 Qualifiers Page 5 Articles & demonstratives	✓	✓
September 21, 2009	Unit 3 Pages 1,2,3 and 4	The Water Cycle (talking about the continuous movement of water)	Page 3 Conjunctions Page 4 Prepositions	✓	✓
September 28, 2009	Unit 4 Pages 1,2,3 and 4	Biodiversity (talking about degree of variation of life forms)	Page 2 Quantifiers Page 4 Modals and phrasal verbs	✓	✓
October 20, 2009	Unit 5 Pages 1,2 and 3	Sign language text (talking about Plate Tectonics)	No grammar identified here	✓	✓
October 23, 2009	The Cell Quiz and The Water Cycle Quiz				
November 11, 2009	Forum Question	On The Cell as a Busy Factory			
November 12, 2009	Forum Chat	Follow up on above			

Table 3.1. Contents of ELP3

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As this research investigates the usage patterns of participants in terms of accessing the online resources, this section now describes the structure of a typical module/unit within the ELP3 in order to highlight its features. Each unit is primarily made up of video clips, showing explanations of a topical item delivered in Indian Sign Language; the reading exercises; practice activities; practical external sites on grammar topics and further external readings on topical items. Each unit begins with a video clip showing the introduction to a topical item as a basis for the grammar topics (e.g. quantifiers and articles) and this is accessible by clicking the Page 1 link for the unit on the main page (see *Figure 3.3,* below).

Figure 3.3. Accessing a signed explanation of a topical item in Unit 1

The ISL clips at the start of each unit include a signed explanation of the topical item; these are the only signed parts in this platform. The signed explanation was provided to enable participants to understand the associated text, and this usually appears in page 2 in every unit. The intention was to help users to learn English vocabulary and grammar as independently as possible, and to facilitate greater understanding by providing sentence examples. After the introduction, each unit has three to seven pages containing further activities that explain the topic, such as topical item reading (see *Figure 3.4,* below).

Figure 3.4. Example of reading of the topical item as previously explained in ISL

Development of topical item readings went through the following process: English text on a particular topic was elicited from several different sources on the Internet, and then the team re-wrote the information several times until it was in a format that the Principal Investigator could use to highlight certain areas of grammar (e.g. quantifiers). Thus, a reading exercise is followed by examples of how the relevant grammatical rules are applied, as in *Figure 3.5* below.
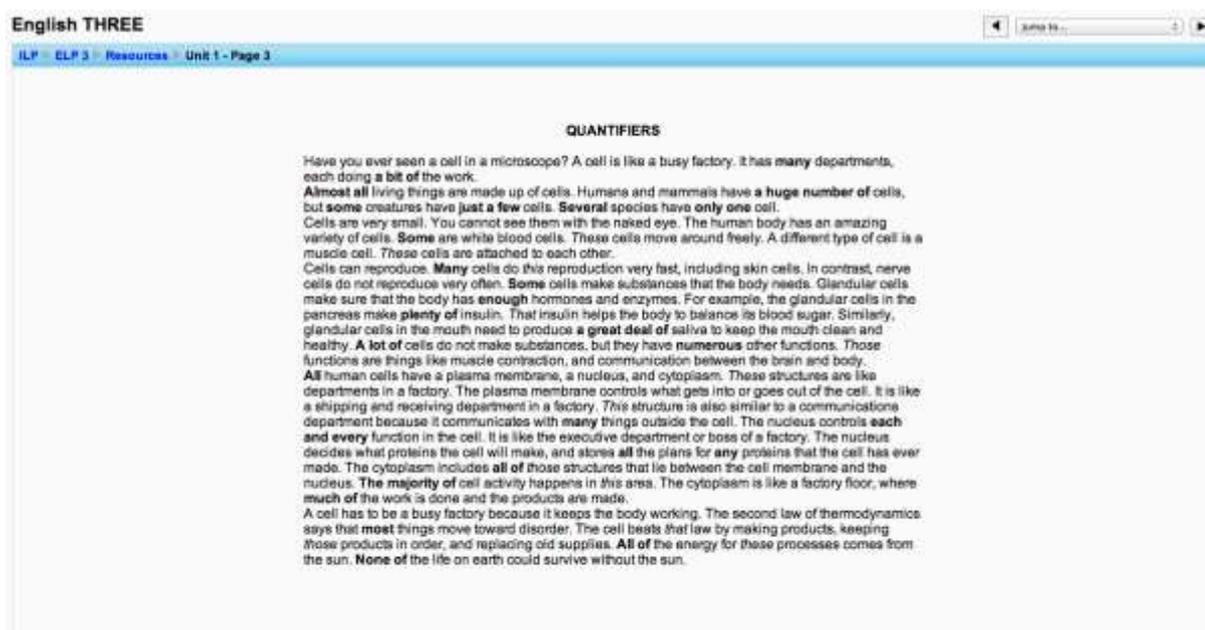
Figure 3.5. Grammatical topic of quantifiers in the reading of 'The Cell as a Busy Factory'

These examples are then supported by external practice on grammar topics and further external links to readings on the topical item in question. Words relevant to the grammatical topic 'quantifiers' are indicated by the bolded text. In some exercises there may be two grammatical topics in succession, such as in Unit 3, Page 3, and the second topic is distinguished by underlined text. For example, in Unit 3 below, the conjunctions are underlined to distinguish them from the bolded quantifiers above (see *Figure 3.6* below).

Figure 3.6. Conjunctions underlined in the reading of 'The Water Cycle'

In addition to the clips, practice activities are included in each unit. These are appropriate to the unit level and topic, and are also available on external websites, accessible through links from the unit pages (see *Figure 3.7,* below).

Figure 3.7. Links to external websites on the grammar topic 'Quantifiers'

At the end of the units 1 and 3, there is one or more graded exercise, for which students can receive summative feedback (see *Figure 3.8,* below).
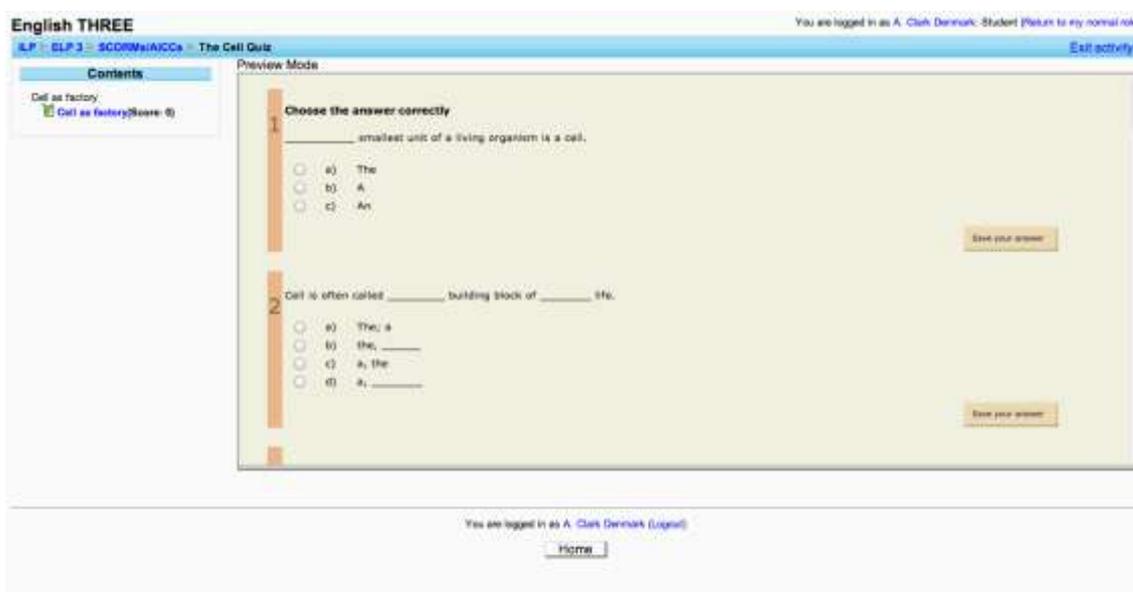
Figure 3.8. Example of graded exercise - Unit 1 quiz on 'The Cell as a Busy Factory'

Examples of graded exercises are fill-in-the-blank, in which students select the correct quantifiers for a given sentence (Unit 1), the correct conjunctions for a given sentence (Unit 3), and complete a short writing practice on topical examples (Units 1 and 3). The graded exercises in each unit were developed using Wimba Create (formerly Course Genie), a Microsoft Word plug-in software that can convert course content into interactive web pages. After completing each unit, students could post on the ELP3 discussion forum, to ask questions and get even more practice writing in English (see *Figure 3.9,* below).
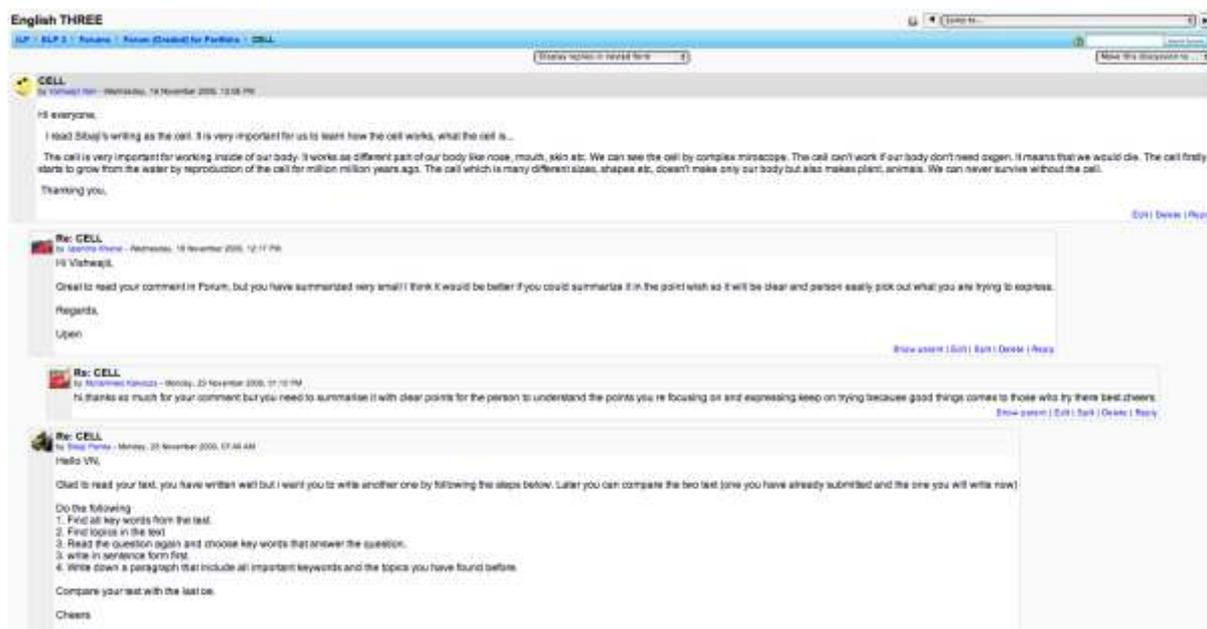
Figure 3.9. ELP3 Graded Exercise Forum

3.3 Research Design, Methodology and Fieldwork

In order to investigate the research questions, both quantitative and qualitative data sources were used in this study. A multiple-method, triangulated approach was adopted to facilitate robust answers to each of the questions, as certain methods are more suited to particular questions. There are several variants of triangulation, including the "convergence model", the "multilevel model" and the "data transformation model" (Creswell and Plano Clark, 2007: 64-5). The "validating quantitative data model" was deemed most appropriate for this study due to the nature of the research questions and the resources available. This model allows a researcher to "validate and expand on the quantitative findings" using open-ended questions (ibid: 65). Thus, this study has used interviews to corroborate the user engagement and patterns indicated from automatically-generated ELP3 data and from the questionnaire (see *Figure 3.10* below), which are described in detail in section 3.4; this enabled the triangulation process.
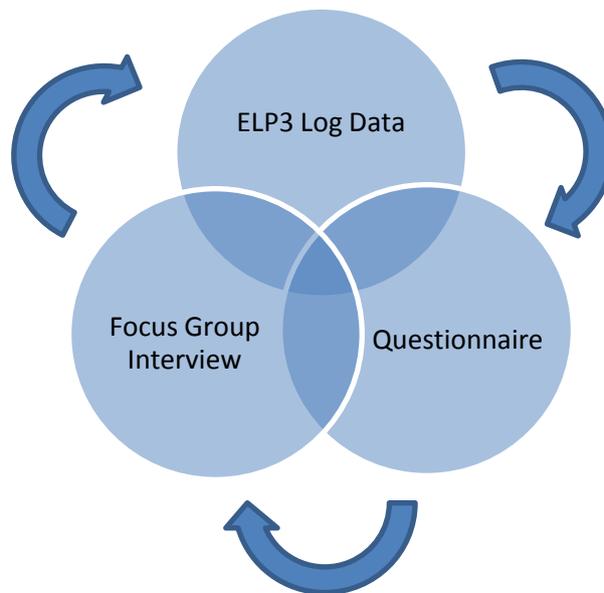
Figure 3.10. Triangulation process in this study

As Creswell and Plano Clark (2007) suggest, this model does not lead to a large qualitative data set, and indeed in this study the quantitative data were much more substantial than the qualitative. This multi-function methodology enabled the researcher to glean both statistical information and the views of the participants, and relate them to each other. This led to the identification of several focal points related to the use of the ELP3 and to the participants' views of it, which are discussed in detail in Chapter 4.

3.3.1 The Participants

The 25 student participants were all sign language users from India (9 being from New Delhi, 2 from Mumbai, 1 from Kolkata and 9 from the rest of India), Nepal, China, Burundi and Uganda, and were enrolled in a university preparatory course at Indira Gandhi National Open University (IGNOU) in New Delhi. The group comprised 5 females and 20 males and the age range spanned from 21 to 45. All but a few of the participants are native users of their country's indigenous sign language and the remaining people learnt ISL at a later age but are all fully fluent sign language users. *Table 3.2* below indicates the language background of the participants:

Place of origin	Sign language background	Number of participants
New Delhi	Native or near-native in Indian Sign Language	9
Mumbai	Native or near-native in Indian Sign Language	2
Kolkata	Native or near-native in Indian Sign Language	1
Other urban and semi-urban areas of India	Native or near-native in Indian Sign Language	9
Uganda	Late learner of Ugandan Sign Language; beginning acquisition of Indian Sign Language	1
Nepal	Native in Nepali Sign Language; fluent in Indian Sign Language	1
Burundi	Native in Burundi Sign Language; beginning acquisition of Indian Sign Language	1
China	Late learner of Chinese Sign Language; beginning acquisition of Indian Sign Language	1

Table 3.2.Language Background of Participants

3.3.2 Ethics

3.3.2.1 The Role of the Researcher

The researcher is a native British Sign Language user and fluent International Sign user, as well as able to learn another sign language in a short time. He is a Senior Lecturer at UCLan, but at the time of the fieldwork visit he was a researcher. As a result of these roles, he is known to the BAASLS students through Course Leader Sibaji Panda's association at UCLan. A risk emerges here, as people might feel compelled to take part in the study due to the status of the researcher. In order to minimise this risk, the researcher firstly made it very clear that he was working in the role of researcher and not as a Senior Lecturer from UCLan, and secondly that people should only take part in the study if they wanted to, that they have a right to withdraw at any time, and that this would not affect their position.

3.3.2.2 Communicating the Project to the Participants

The researcher was able to explain the project using a mixture of ISL and International Sign, which helped to create effective communication. The aims of the research (see Chapter 1) were explained to all participants so as to reduce the chances of any misunderstanding regarding the outcomes of the study. Informed consent was obtained at the beginning of the study. It was explained to participants that interview clips, or quotes from the interview, might appear in articles or presentations. The researcher went through a consent form with all participants, explaining the questions and asking them to put a tick in the box next to the answers that they wanted to give. A copy of the consent form is presented in Appendix 2. Participants were not paid to participate in the study, but they were told that a there would be an opportunity to see the thesis summarised in ISL, and ask questions. The contribution that participants made to this research by taking part in the study is acknowledged in the foreword.

3.3.2.3 Confidentiality and Data Protection

As the deaf community is a comparatively small and well-connected group, there are special issues to consider on confidentiality and anonymity for participants. Where data are used in this thesis – either as figures from the log data and questionnaire data, or as quotes from interview data – it was decided to make the data anonymous by giving each participant an unrelated set of initials, such as P1. This means that the researcher and, in some cases, the participants, are the only ones who know which initials refer to which participants. Total anonymity is therefore ensured, but it would still be possible for the researcher to share with a participant the data that refer to her or him, and the link between different kinds of data – which could be important if others wish to use or check the data – is still retained. Interviews took place in Indian Sign Language and were video-recorded, and it was essential to make sure that the data were protected. In compliance with ethical principles, it was decided that these video data would only be accessible to the researcher and his supervisory team, and the mini DV cassettes that hold the data have been and will continue to be stored and protected at the International Institute for Sign Languages and Deaf Studies (iSLanDS) at the University of Central Lancashire, where the researcher carried out his studies. Participants were reminded several times about anonymity and confidentiality, in order to reassure them that it would not be possible for data in the public domain to be identified with them.

3.3.3 Pilot Testing

3.3.3.1 Pilot of ELP Event Log Data

A pilot test of the ELP took place late in January 2009 and ran for a duration of two weeks. For piloting purposes, the ELP1 was used, as the ELP3 had not been created by then. The pilot testing involved 5 staff members from iSLanDS and Deaf Studies at UCLan, who each recorded their interactions with the ELP1 (see *Figure 3.11,* below).

Figure 3.11. Logs of ELP1 Beta testers

The purpose of pilot testing was to ensure that the ELP1, based on the Moodle Learning Management System, was operating effectively, and faithfully recording each participant's activities. Pilot testing also provided an opportunity for the course developers to amend any activities within the ELP1 if necessary. The pilot participants were required to record on a log-in sheet how many times they went online, and how long they spent on each activity and unit. They were also asked to write comments about, for example, why an activity took longer than expected or what they thought of its level of complexity. Each unit was to be tested for one hour per day, for three days. It was taken into account that the beta testers' levels of English competence may not match those of the actual learners in India (see *Figure 3.12,* below*).*
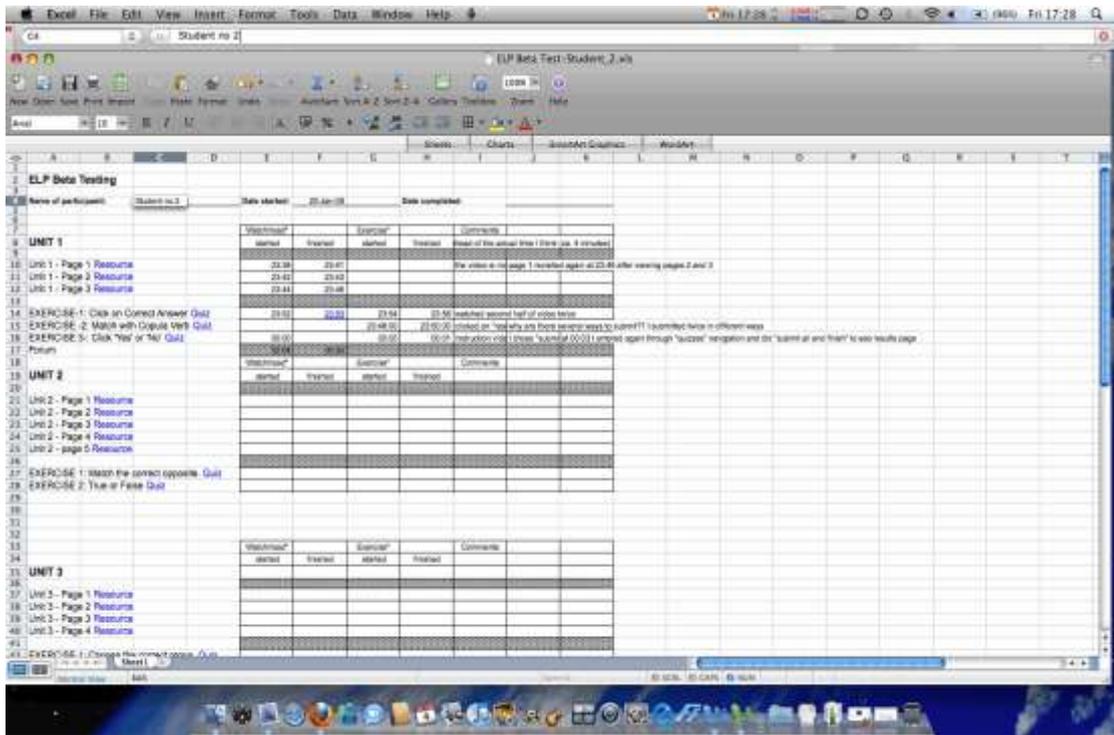
Figure 3.12. Log-in sheet of beta tester no. 2

The figure below illustrates how the staff's records were checked against Moodle's activity logs (see *Figure 3.13*).
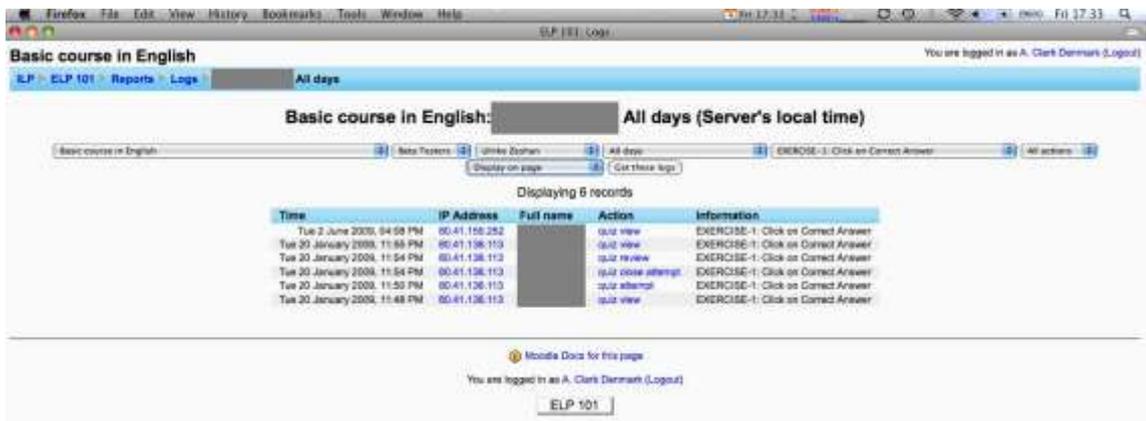
Figure 3.13. Beta tester no. 2's activities on Exercise 1 (Check-Correct-Answer)

The results of this pilot test indicated that although records were returned accurately, some issues arose, which are further explained below.

3.3.3.2 Problematic Issues Raised during the Pilot

As Moodle was developed over a substantial period of time, the programmers have eliminated many bugs. It is now a largely robust and reliable piece of software, and difficulties in using it are rare. As advised earlier, it is relevant to note that most of the deaf international members of the beta tester group had levels of English competence that were quite good, i.e. between IELTS level 4 and 5. However, they still found completing the log-in sheets too complicated. As a result of this, the researcher decided that for the field work, the log-in sheets would not be used. Some of the beta testers experienced bandwidth difficulties when accessing the platform outside of the university, i.e. from their homes. So it became necessary to take into account that UCLan has a different bandwidth than the locations at Mumbai and New Delhi, and peak usage and traffic patterns across time zones mean that consistent performance of browsing cannot always be guaranteed. Therefore, it was recognised that access problems may occur. One contingency plan in case of such a problem involved creating a DVD of all signed materials on the ELP1 and ELP3, so that users would not be at the mercy of their bandwidth. Another option was for users with limited bandwidth to access the text-based rather than the signed material, as text requires less bandwidth performance, but the contingency plans did not have to be put into place, as the bandwidth performance at IGNOU was sufficient.

3.4 Data Collection and Analysis

3.4.1 Data Collection Sources and Procedures

During the period from 15th October to 31st December 2009, quantitative data were collected through activity logs of learners' ELP3 usage and via a written questionnaire. Information on their log-on patterns and ELP3 activities were sought as initial clues as to their confidence levels, and to how they used the features. The first learner logged in on the 15th of October 2009. Moodle's internal reports kept a record of each ELP3 participant's activities, including how many times s/he logged on, how long s/he stayed online, and how long s/he spent on the unit activities. These reports enabled the researcher to determine how much time participants spent achieving the learning objectives, completing graded exercises, or doing other activities. Further quantitative data were collected in the form of a written Likert-scale questionnaire (completed at IGNOU on 15 December 2009 prior to an international sign language research

conference, SIGN4, that was taking place at IGNOU), which asked participants to rate various statements about using the ELP3, hence providing data relating to both of the research questions. The reason for using these was that they would provide easily-processed data from a greater number of participants than the subsequent interviews. The questionnaire generated numerical data on participants' feelings about communication whilst using the ELP3, about working with other students and about their overall learning experience.

The qualitative data were collected in the form of Student Focus Group Interviews that took place from 18th to 19th December 2009, during the SIGN4 conference. Although it was originally intended to conduct 25 one-to-one interviews, this was not possible. The Student Focus Group Interviews sought to discern participants' accounts of their communicative behaviours whilst using the ELP3; their reflections on their collaborative learning; and their perceptions of the experiences, attitudes, and beliefs of the group (the electronic learning community) and of the cultural context of the online environment. This qualitative methodology was used to investigate students' engagement with the ELP3 as a whole, rather than examining the individual components (e.g. forum-based activity). This facilitated a broad, rather than piecemeal, impression of how the users related to online learning and facilitated discussion of user engagement in relation to the second research question.

To supplement the qualitative segment, the researcher casually observed participants' use of the ELP3, though the observations were not formally recorded. Casual observations allowed the researcher to further examine participants' activities, create learning profiles about them and investigate the accuracy of the ELP3 activity reports. The data collections and analysis proceeded from the point of initial event log data collection to the end of the study period. The findings of the thesis stem from this temporal research analysis flow:
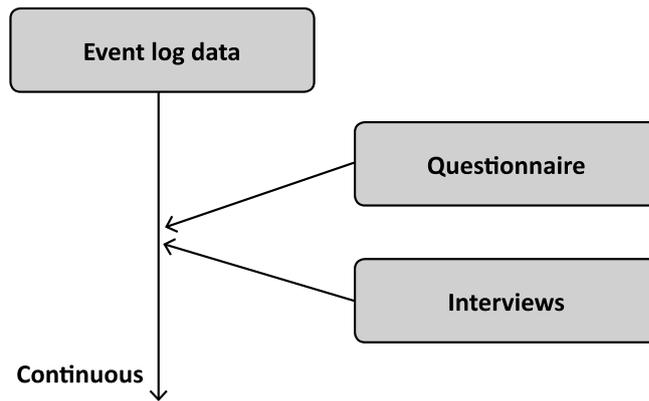
Figure 3.14. Research analysis flow

3.4.2 Quantitative Data

This section describes the quantitative data used in this study and how the data were generated and analysed.

3.4.2.1 Automatically-generated Data from the ELP3

This study utilised quantitative data gathered through electronic observation. Creswell and Plano Clark (2007: 31) note that the crucial issue in establishing validity of quantitative data is accuracy of the accumulated evidence, and the Content Organisation element, in section 3.2.3 above, has been included not only to give the reader an insight into the ELP3, but to evidence the fact that the Moodle is an accurate, reliable piece of technology. The quantitative data break down online behaviour into three aspects: log-in frequency, activities completed, and types of participation, showing the extent to which the students used the features of the ELP3. Usage statistics were to be collected electronically per session and per student, resulting in a full and detailed quantitative record of uses, activities, times, intervals, grades, etc. Such data are generated regardless of whether participants leave signed or written comments on the e-learning system. The use of such quantitative data in this research is ideal for three reasons. Firstly, combining an analysis of statistics with the qualitative methods gives this study a multi-instrument approach and allows a more reliable and valid evaluation of participants' understandings, motives, purposes, perceptions, interpretations and beliefs. Secondly, the nature of the research topic and the technology used means that electronic data are

automatically generated and easily accessed. Thirdly, the ELP3, like other electronic environments, is a 'context in progress' (Shimahara, 1988: 77), i.e. it is being constantly created and updated by its users. This makes it a natural context for enquiry into human behaviour (ibid).

Moodle's built-in data collection facility features several ways in which the user (i.e. an instructor, administrator or a researcher) can view different permutations of data. These options are listed on its Report page (see *Figure 3.15,* below*).*
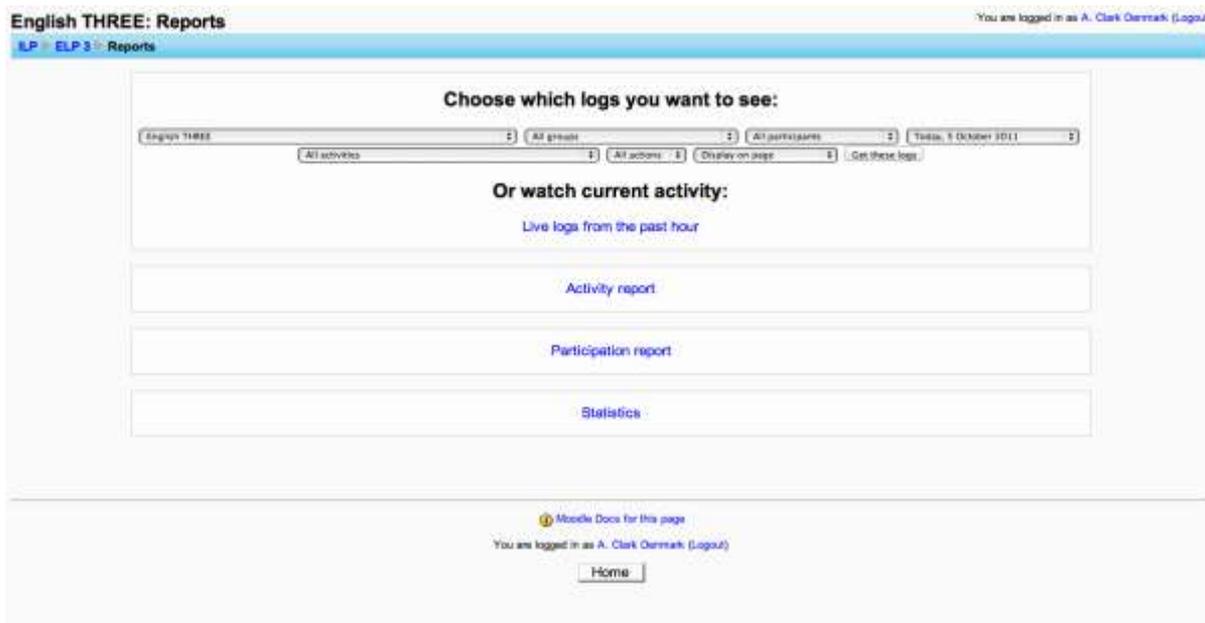
Figure 3.15. ELP3 Report page

- **Report Page**

The most detailed data can be accessed by selecting which course/site logs and user activity reports to view on the Report page. (The other three options described below involve following a link from the Report page, but for this one, the user selects from drop-down boxes on the Report page itself.) There are seven drop-down boxes for this facility. The first six enable the user to view logs for any or all of the following: courses, learning groups, individual students, dates, activities, and changes to course content (e.g. additions and deletions). The last box contains choices for how this log information is output: on the page, in text format, in Excel format, or in Open Document Spreadsheet format. So, for example, the user could find out which students in Sibaji's group completed the Quiz for Unit 1 on Thursday 29th October, 2009.

- **Live Logs Link**

The second way to access ELP3 data is through the Live Logs link. Clicking this link allows the user to see a table of what has been happening online in the past hour: who has logged in and when; what resources are being used; and whether an individual student has viewed the resource they claim to have read. Because only the most recent hour of activity is available, Live Logs is of course designed for real-time, rather than historical or overall data.

- **Activity Reports**

The third option is Activity Reports, which list units, exercises and discussion forums, along with the number of times each has been viewed and the last time it was accessed. This provides an outline report on all students, enabling teachers to see how much students as a whole have engaged with different parts of the ELP3. An individual student's Activity Report can be found by clicking the 'All participants' link in the right corner of the first or main page of the ELP3, then clicking on an individual student's name and selecting 'Get these logs' from the tab on the Report page. This detailed report on the individual lists a certain activity they have engaged with, the date and time, and what the person has done involving that item, e.g. how many times they viewed it. For example, *Figure 3.16* (below) displays a student, P3 who accessed the Unit 1 Page 1 a total of 33 times during the study period (15th October to 31st December 2009), and 39 times in all.

Figure 3.16. Activity Report of a student, P3

- **Participation Reports**

The final way to view data is through Participation Reports. This link on the Report page leads to a page with four drop-down boxes, allowing the user to select an activity (e.g. an assignment, unit, etc.), a period of time (e.g. past week, past four weeks, etc.), an action (i.e. view, post or both), and which users to view (i.e. students, teachers, administrators, creators or guests). Using this facility, teachers can monitor students' overall use of the platform, see how many times a student has posted a message, how many times they have viewed a particular discussion, how many times they have updated or deleted a post, etc. The search results are listed in tabular format according to students' names or ID numbers. These options are listed on the Participation page (see *Figure 3.17,* below, which shows students who have accessed Unit 5, Page 1).
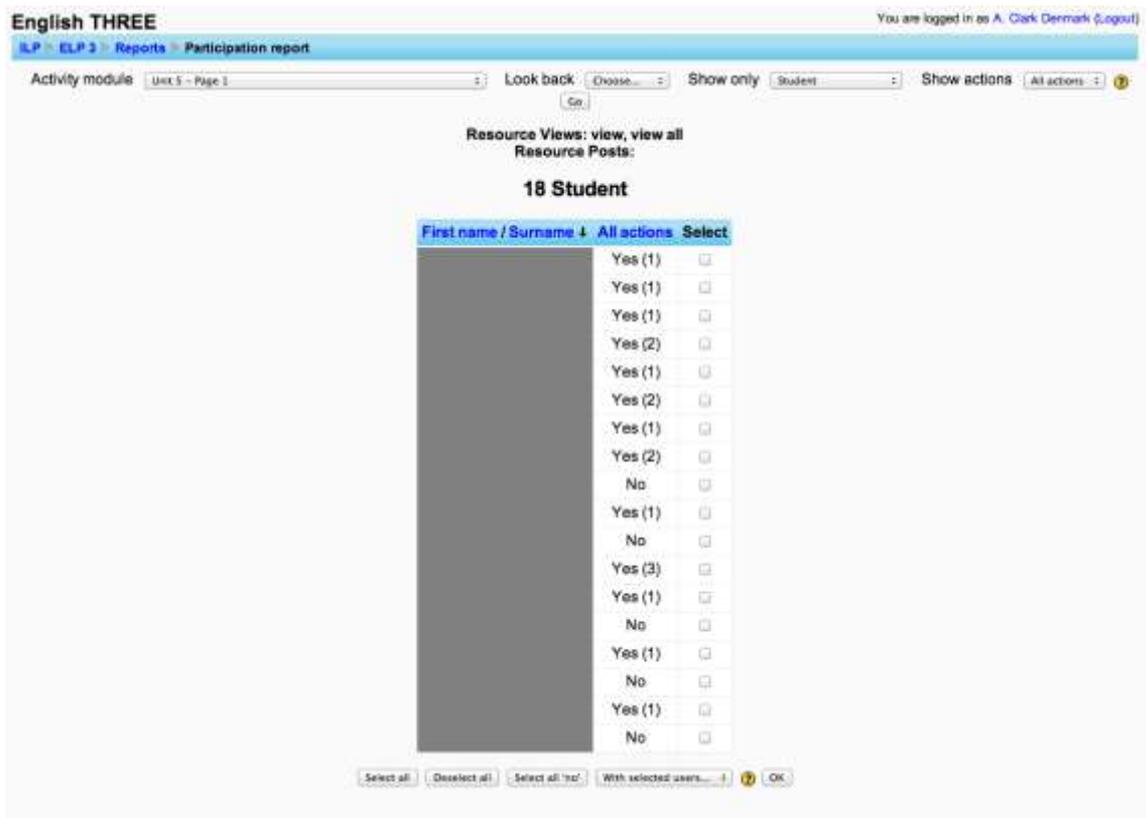
Figure 3.17. Participation Report

3.4.2.2 Questionnaire: Likert survey

Quantitative data were also collected in the form of a written Likert-scale questionnaire, which asked participants to rate various statements about using the ELP3. The purpose of this was to provide easily-processed data, particularly numerical data based on participants' feelings about communication whilst using the ELP3, about working with other students, and about their overall learning experience. The Likert-scale questionnaire gave further information on participants' personal feelings about using the ELP3, and in combination with the participant interviews, this provided insight into user engagement with the ELP3. The questionnaire was divided into four portions containing statements with which students were asked to agree or disagree, using a 1-5 Likert scale in the first two portions, covering LIKING and UNDERSTANDING (see *Figure 3.18,* below); and a 1-4 Likert scale in the next two portions, covering COMMUNICATION AND CLASSROOM SETTINGS and FEELINGS & EVALUATION.

Student's Experience on ELP3:"Understanding'

Scale	1 ☞	2 ☹	3 😐	4 ☺	5 ☝
1. I can follow signed explanations clearly					
	1	2	3	4	5
2. I can understand the English text most of the time					
	1	2	3	4	5
3. I can complete the quiz exercises every time					
	1	2	3	4	5
4. I learn from the links to external sites most of time					

Figure 3.18. Questionnaire

The first portion contained several statements relating to students' general feelings about working on the ELP3, such as "I like reading the English texts" and "I like doing writing exercises in the forum". The second part focused on students' feelings on communication whilst using the ELP3, and included statements like, "I can follow signed explanations clearly" and "I understand what my teacher explains to me about the lab tasks". The third section relates to how the students felt about the ELP3 as a learning platform. This featured the following types of statements: "I could manage on my own doing the ELP3"; "My teacher helps me complete the ELP3 tasks". The fourth part aimed to find out students' feelings as part of an evaluation of the ELP3, and included statements such as "I find ELP3 activities very interesting" and "I would like to do the ELP3 activities and tasks outside of the lab". The questionnaire (see Appendix 1) served a dual purpose: to retrieve information relating to elements of both of the research questions, and to enable the triangulation process by providing further quantitative information for comparison with the event log data.

A Likert scale is a type of psychometric response scale often used in questionnaires, and is the most widely used scale in survey research (Brown, 2000). When responding to a Likert questionnaire item, respondents specify their level of agreement with a statement. The scale is named after Rensis Likert, who published a report describing its use (Likert, 1932). Likert-scale items are useful for assembling respondents' feelings, opinions, attitudes, etc. (Brown, 2000). Traditionally a five-point scale is used; however, many psychometricians advocate using a seven or nine-point scale. Liker scaling is a bipolar scaling method, measuring either a positive or a negative response to a statement. Sometimes Likert scales are used in a forced choice

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method where the middle option of "neither agree nor disagree" is not available. Likert scales may be subject to distortion from several causes respondents may avoid using extreme response categories (*central tendency bias*); agree with statements as presented (*acquiescence response bias*); or try to portray themselves or their group in a more favourable light (*social desirability bias*). (Brown, 2000). In this questionnaire, a five-point scale and a four-point scale were used. The range on the five-point scale was: 1=strongly disagree, 2=disagree, 3=neither agree nor disagree (neutral), 4=agree and 5=strongly agree. In the four-point scale the middle range was removed to avoid the central tendency bias (Brown, 2000).

It is often difficult to decide what kind of information the data coming from such a Likert-scale item represent. Three scales of measurement are often described in books on statistical analyses of surveys: categorical, rank-ordered and continuous (Brown, 2000). Categorical scales, also called nominal scales, quantify the data by tallying up the number in each of two or more categories. In terms of the present study, for example, a group might be made up of 15 occasional users of the ELP3 and 10 more frequent users. That information taken together is a nominal scale with two categories (occasional and more frequent users). In rank-ordered scales, also called ordinal scales, the information is quantified by giving each data point a rank. For example, the students in the ELP3 data might be ranked from 1st to 25th in terms of their frequency of log-ins. That, or any other such ranking, would constitute a rank-ordered scale. Thus, any variable for which ordinal numbers are being used (1st, 2nd, 3rd, 4th, etc.) is a rank-ordered scale. Continuous scales (also sometimes separated into interval and ratio scales) quantify at equal intervals along some yardstick. Thus, similar statements, e.g. 'a classmate helps me in doing ELP3 tasks' and 'the teacher helps me in doing ELP3 tasks', may be measured equally. One other characteristic of continuous scores is that calculating means and standard deviations makes sense (Hatch & Lazaraton, 1991; Brown, 2000, chapter 1; 1988, pp. 20-28; 1996, pp. 93-98; 1999, pp. 109-115). Although models for analysing statistics are readily available, this small size of this study group, only 25 participants, meant that statistical analysis would be limited and percentages are used instead.

3.4.3 Qualitative data

Qualitative research is used in this study to glean the views of participants on "a particular phenomenon" (see Creswell and Plano Clark, 2007: 28), in this case, using the online learning platform. The researcher's intention was to enable participants to give their full opinion, so open-ended interview questions were employed; it was hoped that this would promote a variety of rich and multifaceted answers (ibid: 30). The interviews were originally planned to attempt to cover two crucial aspects of the English learning platform usage: how participants adapted the learning management system as part of blended learning and how they assimilated the sign language video clips. However, this was narrowed further during the actual research activity (as the next section explains). It is useful to delve deeper into these two aspects of ELP3 usage in order to gain a clearer understanding of why they need to be examined qualitatively. The first aspect that the interviews covered focused on how participants adapted the learning management system as part of blended learning. The online portion of blended learning may be problematic for deaf Indians, in that they are used to a great deal of face-to-face social interaction, which is lacking when they are using the ELP3 on an individual basis. It is thus worthwhile to find out how the participants adapt to blended learning because this illuminates the fundamental question of what motivates the less independent student (Salmon, 2000; 2002). This part of the interview allowed the researcher to determine the effects and effectiveness of the blended learning approach in practice for deaf users.

This was the first time, for almost all of the learners, that they had been exposed to a sign language instruction format without reference to videos. Enquiring about this in the interview provided a way to further examine students' English language learning experiences and to understand how they perceive the ELP3 in the learning and teaching process (Mertzani, 2006b), thus providing more evidence of how the participants viewed the ELP3 as an instructional approach. This portion of the interview was necessary in order to illuminate the role of sign language videos in supplementing the traditional face-to-face classroom learning, and to ascertain to what extent the videos add value to an ELP and enable 'learning anywhere at any time', including opportunities for active participation and mastery of course content (Chou & Liu, 2005).

3.4.3.1 Student Focus Group Interviews

Focus group interviews were used to test hypotheses about the quantitative data. The focus group interviews gave students the opportunity to share their thoughts and opinions about the ELP3 in groups, rather than individually, so that they could add to each other's comments and suggestions and do so in their preferred language. Focus group research is defined as a method of collecting data in a safe environment, from more than one individual at a time, regarding a specified area of interrogation (Krueger & Casey, 2000; Emery, 2006). Onwuegbuzie, Dickinson, Leech and Zoran (2010) suggest several benefits to using focus groups in qualitative research. One of these benefits is that focus groups are economical (Krueger & Casey, 2000): because participants are interviewed in a group setting, the data can be collected faster and usually at a lower economic cost to the researcher. This is particularly pertinent to the current study, as it was only possible to conduct one fieldtrip, due to the distance involved. According to Krueger & Casey (2000), and Emery (2006), focus groups are a means of collecting social data in a social environment, and this was very much the case with this study: the students were well known to each other, and they were interviewed together at a room at the IGNOU Conference Centre.

Student Focus Group interviews were conducted with seven groups overall, with three or four students in each group; hence all 25 participants attended an interview. The size of the group is an important variable, and several references in the literature recommend between 6 and 12 participants so that the group is small enough for all members to talk and share their thoughts, and yet large enough to create a diverse group (Krueger, 1994; Krueger & Casey, 2000; Morgan, 1997). However, the groups used for this study each comprised 3 or 4 participants, and these correspond more to what Krueger has referred to as "mini-focus groups" (page 17), where 3 members (according to Morgan's 1997 definition) or 4 (following Krueger, 1994) are interviewed in order to collect more in-depth information. The practicalities of recording interviews held in sign language on camera also means that a smaller group is more convenient and facilitates a more effective quality of data recording. Due to the limited time available, the format of the interview questions changed; while remaining open to a large extent, they were narrowed down to three open-structured questions. A total of 2 hours and 25 minutes of film was recorded; contents were then coded, which involved making 161 annotations. The questions are as follows:

The open questions:

1. Can you give me an example of your best experience of the ELP?
2. Can you give me a specific example of your worst experience?
3. For what other situations/groups would you recommend using the ELP?

The interview questions were intended to gain insight into the quality of the experience that participants expressed in relation to using the online learning environment. The participants had naturally prepared for the interviews by having completed the questionnaire the day before. The aim of the first question was to probe for 'good' or positive attributes, whereas the second question focused on the areas of the ELP3 that students 'disliked'. The third question allowed students to add anything else that they wanted to comment on that they had not felt able to during the first two questions of the focus group discussion. This provoked answers related to the students' views of the ELP3, as they discussed the use of it for learning English. Focus groups have been shown to have a number of advantages, which applied to this research as well, including:

- generating large amounts of data in a relatively short time span, following quantitative procedures (Raibee, 2004)
- creating a "safer" environment than individual interviews (Vaughn, Schumm and Sinagub, 1996)
- encouraging the group members to feel comfortable with each other and engage in discussion and self-disclosure (Krueger & Casey, 2000; Emery, 2006)

Students were only available for the focus group interviews during the SIGN4 conference and they kindly agreed to take part for up to 20 minutes per group. Focus groups are usually conducted for one to two hours (Morgan, 1997; Vaughn et al., 1996), based on the research questions and design. However, due to the limited time available, the maximum amount of time for each of the seven groups was less than half an hour, though the number of questions prepared for the interviews was small, so it was possible to cover them in the time available for the research purpose. Focus group participants can comprise people who are already members of a pre-existing group, as was the case with this study. Krueger (1994) believes that rich data can only be generated if individuals in the group are prepared to engage fully in the discussion and,

for this reason, advocates the use of a reasonably homogenous group. Based on the topic under investigation, Krueger suggests that participants should share similar characteristics: gender, age-range, ethnic and social class background, etc. The groups used for this study were not arranged exactly as Krueger suggests, but were homogenous in terms of the origins of participants.

3.4.3.2 Coding the Student Focus Group Discussions

As noted previously, qualitative studies, and in particular, focus-group discussions, generate large amounts of data that can overwhelm even experienced researchers, let alone novices. A one-hour interview can take five to six hours to transcribe in full, generating 30 or 40 pages of transcripts. As the interviews for this research were conducted in Indian Sign Language, the responses had to be translated into written English before coding could commence; translation is an intensely time consuming process and added to the complexity of the data coding. As the researcher had been able to acquire a fairly good command of ISL in the short time spent in India, the comments made by the Indian students were able to be translated by the researcher directly into English for the purposes of research. The focus group discussions resulted in 145 minutes of data and it was considered more efficient to code the data using ELAN software. ELAN was considered suitable, as it is software that was specifically created to deal with complex annotations of video recordings. The annotations can be tiered and can be of any required length, and the sign language recording can appear on the page alongside the text translations, so this software is particularly effective for the coding of signed data. With ELAN's built-in controls, it was possible to review parts that might be harder to grasp fully on first viewing, and this made it possible to understand and transcribe fully the comments that participants made. Examples of ELAN software use can be seen in *Figure 3.19* below and at several web sites.[8]

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[8]http://pubman.mpdl.mpg.de/pubman/item/escidoc:60434:1/component/escidoc:60435/Combining%20video%20and%20numeric%20data.pdf as accessed on 28th September, 2011
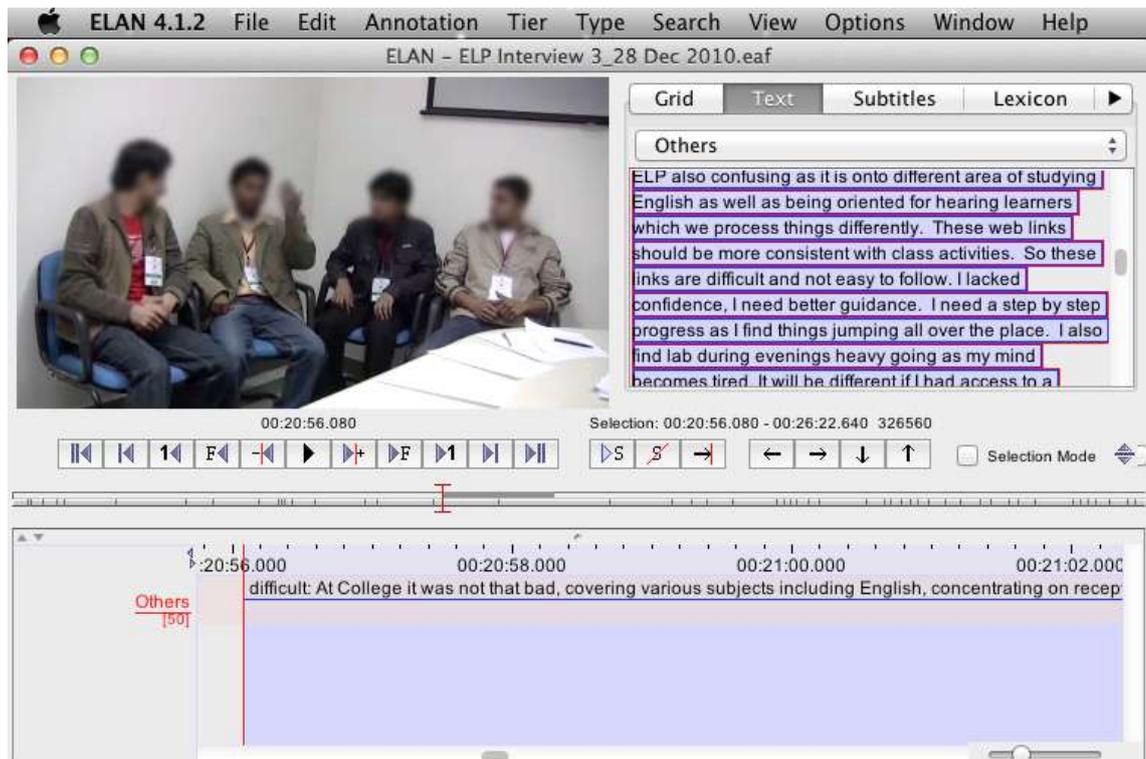
Figure 3.19. ELAN software annotation analysis

Yin (1989) points out that data analysis consists of a number of stages, i.e. examining, categorizing and tabulating or otherwise recombining the evidence, in order to address the initial goal of the study. Krueger & Casey (2000) build on this observation and suggest that the purpose should drive the analysis; they believe that "analysis begins by going back to the intention of the study and survival requires a clear fix on the purpose of the study" (Krueger & Casey, 2000). For this research, a list of keywords was developed inductively. The nature of the questions that were asked gave the students a wide range of possibilities in terms of what they could choose to comment on, but during the process of coding the data, it was possible to determine a number of distinct keyword categories, which ultimately totalled eight. While translating the data via ELAN, the researcher was able to consider the participants' views of using the ELP3 alongside already accumulated knowledge of their patterns of usage of the platform, and of their preference for certain elements of it. This process of qualitative data analysis aims to bring meaning to a situation rather than being a search for facts, which is the goal of quantitative research. Strauss & Corbin (1998) describe analysis as '…the interplay between researchers and data', acknowledging that there is an extent of subjective selection and interpretation of the generated data. It is important to acknowledge that, regardless of the type of research (qualitative or quantitative), an

extent of subjectivity exists. The distinction should be seen more in relation to the stage of the process rather than just the type of subjectivity. For example, the issue of subjectivity in surveys often occurs at the stage of designing the questionnaire, where the pre-setting of answers can prevent the expression of other potential answers, hence indicating pre-supposed interpretations of the issue under investigation.

In this study, it is acknowledged that there is an extent of subjectivity in the stage of designing the questionnaire; however the third question (number 3) allowed students to add anything else, and that serves to balance the subjectivity here somewhat. Each category was summed up with a key word, and these are listed in section 4.2.1, along with the reason for choosing the keyword. *Figure 3.20* is an example of a translation from one of the interviews, with the keywords added at the beginning of each section.

HELPS: It is first time that India has a BA studies aimed for Deaf people, 25 of us. We were so excited to be taught in sign language, Sibaji is excellent example. He also knows how to teach us and guide us new learnings using PPT, editing, etc. It was good to be able to do presentations without hearing helpers, creating PPTs and edit clips and all that makes us all proud and exciting. Once the problem of lack of laptops can be resolved by IGNOU, it will enhance the study.

HELPS: likes the signed phrases

HELPS: Moodle can be better than catching up through peer group

HELPS: Moodle helps students to catch up if either a student miss class or a teacher off ill

HELPS: One not only learn English, I have same difficulty coming from Nepalese, but learn English Grammar as well as the Sign Language grammar as used by signers in the ELP.

HELPS: Q&A's quite enjoyable

HELPS: sellf learning activity when teachers not around

HELPS: Sibaji's signed parts on The Cell and Language Acquisition

HELPS: the video part and text part links very well. I would not have gained much had there not been either of them there, they are very good but cannot rely on either independently

HELPS: The weblinks to English websites helps me to develop English further

HELPS: Using dictionary to find examples of using such word; sometimes I asked teacher to help but I try to use dictionary to progress

INTERNET: working in group helps but on own can be intimidating especially being given new assignments

VIDEOS: it helps to access English clearly

VIDEOS: with video and guidance it helps deaf people to learn

Figure 3.20. Translation text from an interview

In order to minimise the potential bias introduced in analysing and interpreting focus group data, Krueger & Casey (2000) point out that the analysis should be systematic, sequential, verifiable, and continuous. The actual process, as shown as in *Figure 3.21*, involves starting with eliciting raw data from the filmed interviews, translating the participants' comments, and coding them into probable keywords.

During that process keywords can be amended or recategorised. The next stage of the process is finding the sub-categories, as explained in section 4.2.1.1. Following this path provides a trail of evidence, as well as increasing the extent of dependability, consistency and conformability (Lincoln & Guba, 1989) of the data: these are important issues for assessing the quality of qualitative data (Secker, Wimbush, Watson & Milburn, 1995).
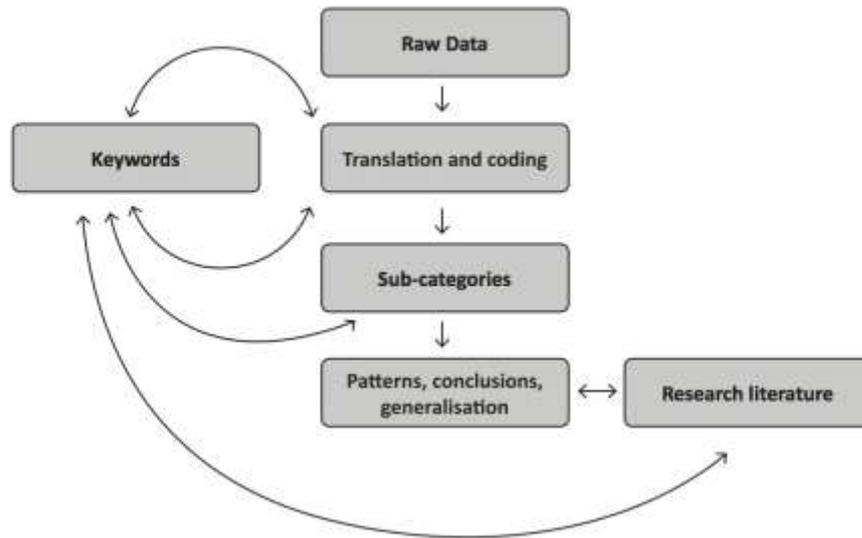
Figure 3.21. Keywords analysis process

Once the utterances have been assigned to keywords and the keywords inputted into ELAN as annotations, the programme is able to search for these annotations. This allows the researcher to view all utterances relating to a particular keyword, as shown in *Figure 3.22*. ELAN's built-in search facility is helpful for assessing the number of times that associated annotations are used within the interview data. The purpose of this explanation is to illustrate the wider context of the data, rather than restricting it to the number of times a keyword is used, as this provides a better sense of the students' opinions of the ELP3. On the basis of working with the search process, the sub-topics could then be posited.

Figure 3.22. Occurrences of the annotation 'Internet'

An example is shown in *Figure 3.23*, where a sub-topic relates to peers in the learning environment. All utterances containing the term "peer" can be automatically displayed in ELAN.

Figure 3.23. Results of a search for the term 'peer'

This repeated process of coding and searching has guided the analysis of the interview data and has resulted in useful generalisations related to the qualitative experiences of the participants with the learning environment. As the qualitative analysis patterns are written down, conclusions and generalisations are developed with reference to the research literature. Some of the keywords were created inductively from the participants' comments, while others emerged from the researcher's expectations, which were based on the study framework and literature.

3.5 Summary

This chapter has aimed to give the reader a general understanding of why this research has used a mixed-methods approach, specifically the "validating quantitative data model" (Creswell and Plano Clark, 2007: 65), and it has also attempted to provide an overview of the specific methods and data employed in this approach. First to be examined were the quantitative methodologies, the use of automatically-generated ELP3 data, some technical aspects of the ELP3 itself, and the content of the questionnaire. A discussion of the qualitative methods was also provided, including a description of the data coding and an explanation of how and why the interviews were conducted. The findings from the research activities and the results of the study are illustrated in the next chapter.

4.0 CHAPTER 4 – RESULTS

4.1 Quantitative Data Analysis

In order to discuss the features of the data on a quantitative level, data from the event log site and from a written questionnaire were analysed. This section describes the findings of the event log data analysis, selecting results that reflect the extent to which the participants used the features of the ELP3 and their views regarding its usefulness as an instructional tool. The research questions were considered simultaneously whilst analysing results in order to enable the continual validation process.

4.1.1 Event Log Data Analysis

The event log data from the site were analysed in order to illuminate how different participants used the ELP3. All of the log activity from the entire period (9,282 separate log events) was included in this data and copied to an Excel spreadsheet for analysis. Below is an example of 4 rows from this spreadsheet (see *Table 4.1*). In this example, row A events refer to unit pages with sign language content being accessed by students from the ELP3 site; row B refers to unit pages with English text for reading; row C refers to unit pages with external links for practice; and the row D events refer to unit pages with external links for reading.

Unit pages hits (n=25)	
Resources	**No of hits**
Unit pages:	2107
A: Unit pages with sign language content	738
B: Unit pages with English text for reading	868
C: Unit pages with external links for grammar practice	333
D: Unit pages with external links for reading	168

Table 4.1. Number of accesses of the four types of unit pages

Since the event logs record all user actions in every tool, these quantitative data were useful for identifying which tools were used more than others and also how tools were used in different ways over time; hence, they provided data related to the first research

question. All event log activity for the 25 participants was analysed from the database and the details and results of the analysis are presented in the following sections. The first step involved grouping all events from each month in order to more easily identify when in the period an event was taking place. All of the events from each tool were also grouped and assigned a corresponding tool field (e.g., chats) to identify the patterns of user access, which would be useful to illuminate some of the users' views about the instructional approach (see *Table 4.7*, below). Finally, the participants' official IDs were replaced with the study IDs, as in this study, names needed to be anonymous.

The analysis then moved to investigating each participant and exploring similarities and differences in each participant's use of the tools from a quantitative perspective, which helped highlight some possible factors affecting the type of peer interaction, which is also of interest in this study. The latter part of the analysis focussed on participants' use of English in the ELP3, as part of the 'blended' environment for learning English. The aim here was to discuss the event logs in a way that provided a descriptive quantitative context to the qualitative data sources, namely the Focus Group Interview, collected as part of this research. The data from the event logs, therefore, were useful for helping answer both of the research questions.

4.1.1.1 Participants' Access to the ELP3

Theoretically, the participants should have been able to access the online course from anywhere, 24 hours a day, as long as they had an internet connection. However, they did not have access to the internet out of lab hours so they could not use the ELP3 at all then. Of the 30 students registered for the ELP3, only 2 students did not log on to the ELP3 at all, whilst 2 more did log on but only for one single day and they did not continue for the remainder of the time. Four apparently had left the course during the study period and one did not give a reason. In the original data there were 9,282 log hits on the site associated with the 25 ELP3 users. The ELP3 report (n=25), as seen in Table 4.2 below, provides a general overview of student participation; there are 9,096 log hits.

No. of accesses	
Person	Hits
P1	413
P2	163
P3	1339
P4	501
P5	406
P6	234
P7	231
P8	363
P9	382
P10	460
P11	305
P12	261
P13	258
P14	377
P15	318
P16	361
P17	210
P18	605
P19	237
P20	491
P21	183
P22	345
P23	100
P24	301
P25	252
Total	9096

Table 4.2. Number of accesses over the study period

Analysis of the data also indicates that all of the participants (100%) had accessed the ELP3 at least once over the duration of the module; 96% accessed the ELP3 several times a day, 4% of the users accessed it once a day, with 88% accessing it in October 2009 and 100% in November and December 2009 (see *Table 4.3*, below).

	Total days accessed			
	Oct	Nov	Dec	**Total**
P1	7	7	9	**23**
P2	2	3	4	**9**
P3	11	22	25	**58**
P4	7	7	8	**22**
P5	1	8	5	**14**
P6	4	10	8	**22**
P7	6	5	6	**17**
P8	3	7	5	**15**
P9	6	4	6	**16**
P10	7	10	15	**32**

P11	3	10	4	17
P12	7	11	8	26
P13	0	9	4	13
P14	6	5	10	21
P15	7	7	9	23
P16	0	10	5	15
P17	4	8	4	16
P18	9	18	12	39
P19	7	7	3	17
P20	8	9	9	26
P21	0	9	4	13
P22	5	9	6	20
P23	2	2	4	8
P24	7	5	12	24
P25	4	9	5	18

Table 4.3. Total days accessed over the study period

All ELP3 access was made on campus (100%), and participant access varied across time periods, including university hours during 9am-5pm (39%), in the morning before 9am (50%), in the evening (2%) and at the weekend (9%). One of the key positive aspects of the ELP3 as part of the e-learning environment, according to participants, was accessibility to unit pages outside of lecture time, i.e. before 9am and after 5pm (52%), as against during class hours (39%) and after hours access at weekends (9%); see *Table 4.4* below.

Participant	Weekdays			Weekends			Total			
	Before 9am	9am to 5pm	After 5pm	Before 9am	9am to 5pm	After 5pm	Before 9am	9am to 5pm	After 5pm	All hours
1	327	68	0	8	10	0	355	78	0	413
2	113	7	43	55	0	0	168	7	43	163
3	370	479	110	33	317	31	403	796	141	1339
4	218	228	0	0	0	0	218	228	0	501
5	219	187	0	0	0	0	219	187	0	406
6	139	67	0	0	28	0	139	95	0	234
7	157	42	0	15	15	2	172	57	2	231
8	144	199	0	0	20	0	144	219	0	363
9	341	41	0	0	0	0	341	41	0	382
10	264	192	0	0	4	0	264	196	0	460
11	140	165	0	0	0	0	140	165	0	305
12	169	86	0	0	6	0	169	92	0	261
13	89	169	0	0	0	0	89	169	0	258
14	190	167	0	7	13	0	197	180	0	377
15	205	113	0	0	0	0	205	113	0	318
16	33	244	18	19	47	0	52	291	18	361
17	88	122	0	0	0	0	88	122	0	210
18	305	216	21	2	42	19	307	258	40	605
19	135	89	7	0	6	0	135	95	7	237
20	257	183	0	2	27	22	259	210	22	491
21	62	121	0	0	0	0	62	121	0	183
22	203	133	0	0	0	9	203	133	9	345
23	26	57	8	0	0	9	26	57	17	100
24	136	99	0	0	66	0	136	165	0	301
25	180	72	0	0	0	0	180	72	0	252
Total	4510	3546	207	141	601	92	4651	4147	299	9096

Table 4.4. Periods of accesses during the weekdays and over the weekends

This result indicates that participants were possibly on their own during these times, both out of class hours and at the weekend, i.e. without the presence of (a) lecturer(s). During a casual observation made in New Delhi as part of the fieldwork, it was noted that students were often on their own and only supervised by the computer lab technician in the evenings. This point is also confirmed by the questionnaire data, with the statement "My teacher helps me complete the ELP3 tasks" returning with 79% respondents stating that this seldom happens. This may have had implications for students' confidence in carrying out tasks within the ELP3, more of which is discussed in section 4.2. The total time in hours accessed by the participants over the study period is seen in *Table 4.5* below.

	Total hours accessed			
	October	November	December	Total
P1	2:15:53	2:57:05	3:11:21	8:24:19
P2	0:43:08	0:45:55	0:54:46	2:23:49
P3	11:58:06	6:58:29	9:43:08	28:39:43
P4	3:04:32	3:47:55	4:43:45	11:36:12
P5	0:20:37	4:26:55	1:36:23	6:23:55
P6	1:08:36	3:07:57	0:56:49	5:13:22
P7	2:04:52	2:22:31	3:25:52	7:53:15
P8	0:37:22	2:36:13	3:17:08	6:30:43
P9	0:57:55	2:15:48	1:58:35	5:12:18
P10	1:13:08	4:13:36	5:00:02	10:26:46
P11	1:14:07	3:43:48	3:29:29	8:27:24
P12	2:13:19	4:24:36	1:15:25	7:53:20
P13	0:00:00	6:13:41	1:30:04	7:43:45
P14	0:57:30	2:08:07	3:48:10	6:53:47
P15	2:04:24	2:59:18	1:46:27	6:50:09
P16	0:00:00	4:26:33	2:56:11	7:22:44
P17	1:05:37	4:08:46	0:24:07	5:38:30
P18	3:06:48	6:11:40	1:24:28	10:42:56
P19	2:47:49	1:39:01	1:49:43	6:16:33
P20	5:06:34	4:31:34	4:57:22	14:35:30
P21	0:00:00	4:22:59	1:19:11	5:42:10
P22	2:24:32	4:46:19	1:02:06	8:12:57
P23	0:22:43	1:44:59	0:47:23	2:55:05
P24	2:09:17	0:55:38	8:04:48	11:09:43
P25	1:55:17	3:29:24	1:48:36	7:13:17
Total				210:22:12

Table 4.5. Total time accessed during the period of study

The cumulative total is 210 hours over the study period; the highest number of hours of study is by participant P3: 28 hours and 39 minutes. The next highest is by

P20, who went online for roughly half of P3's time, at 14 hours and 35 minutes. The least time spent online was 2 hours and 23 minutes (P2). It is noticeable that in the total column, once the results for P3 are excluded, the remaining results fall equally into two halves, with participants spending over 7 hours in one half and those spending under 7 hours in the other half. Unfortunately, no data could shed light on why this was the case and the researcher was unable to determine the reason as it became apparent at a later stage of the study. In order to explore the first research question relating to usage patterns of participants, uses of individual features of the ELP3 are described below.

4.1.1.2 Patterns of Usage

An indication of overall usage can be obtained from the log of hits (see *Table 4.7*, below). However, caution was taken when examining hits due to the fact that some participants accessed particular resources several times on the same activity without any obvious action. The number of hits is given to demonstrate the general level of interaction participants had with each ELP3 activity, and further analysis of the individual hits is required to determine the level of use of actual activity with respect to numbers of participants. Unit pages with English text had the most hits (the other unit page sub-sections can be seen in *Table 4.6* below), followed by chats, forums and quizzes.

Total Resources Accesses over the Period of Study (n=25)	
Resources	**No of accesses**
Unit pages:	2107
Unit pages with sign language content	(738)
Unit pages with English text for reading	(868)
Unit pages with external links for grammar practice	(333)
Unit pages with external links for Reading	(168)
Forums	419
Chats	918
Quizzes	141

Table 4.6. Log of ELP3 Resources hits

Unit pages with sign language content (in October 2009) were the most accessed resource, based on the number of individual participants who accessed the resources, followed by unit pages with English text for reading. The reason for this is explained in the 'Unit Pages' part in section 4.1.1.3 below. A breakdown of participant hits per resource during the 3-month study period is shown in *Table 4.7* below. It is evident that resource usage generally decreased as the module continued. This is especially noticeable in relation to latter units - there were 5 of them, resulting in 1009 hits for October and for December only 416. Interestingly, the chat session access was greatest, with a total of 834 hits in November, during which the 5 groups of chat sessions started, but this dwindled to only 84 in December. The reason for such high usage in the November chat session is that the ELP3 course instructor said it would be discussed as part of the forum question. Student motivation also played a vital role here, due partly to being told to use the chat session but also because it introduced them to a synchronised chat through the ELP3 that they found amenable to use in order to chat with BPPDS peers. This issue is discussed further in the Chat section below.

Resources		October	November	December	Total
Unit pages:					
Signed content	(5 pages)	393	219	126	738
English text for reading	(12 pages)	375	305	188	868
External practice	(5 pages)	165	98	70	333
External reading	(4 pages)	86	50	32	168
Chats	-	0	834	84	918
Forums	-	47	184	188	419
Quizzes					
The Cell Quiz	-	12	73	17	102
The Water Cycle Quiz	-	0	3	36	39

Table 4.7. ELP3 usage, illustrating hit per resource used throughout the period

The pattern of participant access to unit pages and quizzes could be determined from the ELP3 logs. Data (*Figures 4.1* and *4.2* below) are shown for months 1-3, where months 1-2 correspond to the weeks of lectures and month 3 has some lectures, mainly review time, including handing in assignments and examinations. The next parts cover unit pages, chats, the forum and the quiz in detail.

4.1.1.3 Unit Pages

The unit pages consisted of 4 parts: 3 relating to the learning of English, and the fourth a signed explanation, which can be viewed as part of the instructional approach aspect of the activity. *Figure 4.4* shows a two-peak general trend in participant access to the unit pages resource, namely unit pages with signed content and with English text for reading. Firstly, there is a peak in access to the signed content when the ELP3 became available in October 2009; this could be attributed to the fact that it was the first time that participants were able to access complex topics in sign language. The data from both the questionnaire and interviews confirmed this: 80% of respondents indicated they liked watching signed topic item(s) explanations and one of the comments was, "(I) Liked watching signed parts". Access generally drops off quickly after this, as their reliance on signed content over English text lessens, as happened noticeably in November. As ELP3 is an English learning platform, participants started to read the topical items in the 5 units more frequently than viewing the signed explanation parts, in order to attempt to understand the English part, suggesting that the participants attempted to use the ELP3 as an instructional tool to some extent. However, English reading text access notably drops in December perhaps due to other factors, such as preparing for assignments and examinations. The questionnaire results clearly show that 48% of the group actually did not enjoy reading the topical item(s); however, this was explained in one of the quotes: "I need to re-read several times before being able to understand".

The rest of the components, external accesses, both for grammatical topic(s) practice and further reading on topical item(s), did not have the same number of hits as the other two; this could be due to the fact that these external sites were not specifically written for sign language users, hence participants finding them rather complicated to use, and this again raises the importance of the instructional approach element being informally maintained until participants are confident enough to use external sites. With regards to the remaining data, the questionnaire data differ from the results found here, as they indicate that 60% of the participants liked to use the external sites and 79% of them did understand what these sites entailed. Further comments helped to explain the comparative low rate of external site access. For example, one participant reported that "External links examples should be easy to understand, often the ones in ELP3 are very difficult to understand", and another said, "Would be great if external websites could also be signed in ISL or BSL". It is noted that the favourable responses from the

questionnaire do appear to be hypothetical, i.e. the group would have welcomed the opportunity to use the external sites more had these been more accessible to them. This provides evidence of the potential to view the ELP3 as an instructional approach.
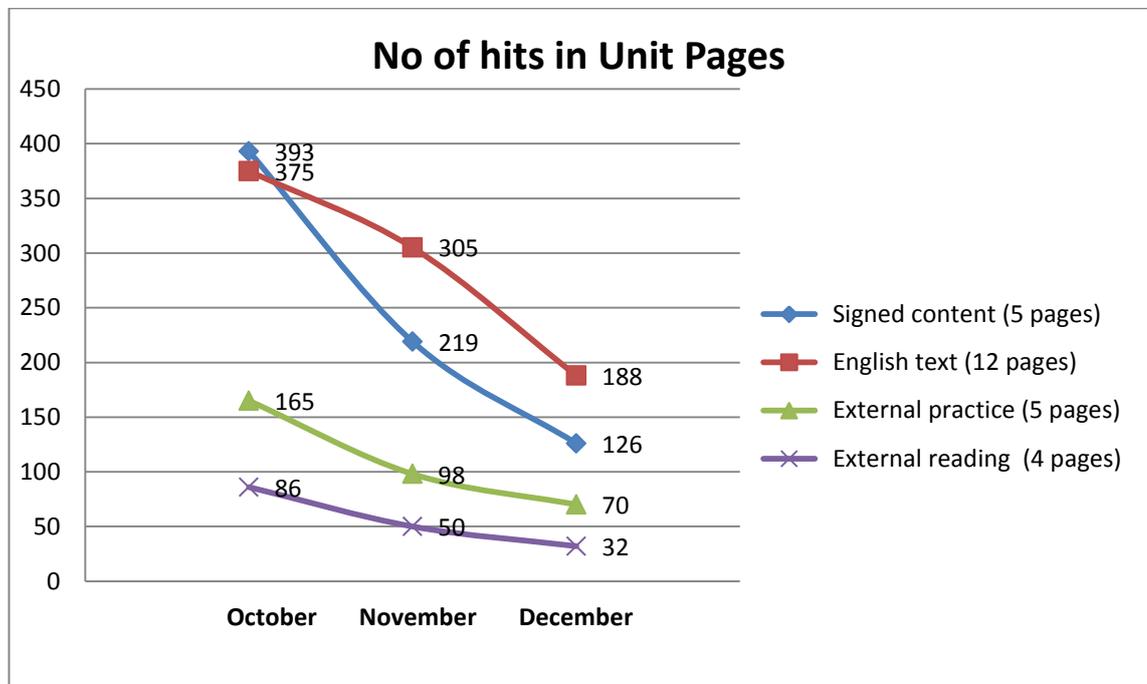
Figure 4.1. Number of hits in unit pages

Figure 4.2 below shows the number of participants who are accessing non-unit pages for the same period. It is evident that the majority of access took place in November when the chat resource was made available, as explained earlier in this section. However, there are still participants accessing the forums quite steadily throughout the period; in fact this is the only resource that actually does not drop after November. These non-unit components are discussed in detail in the next sections: Chats, Forums and Quiz.
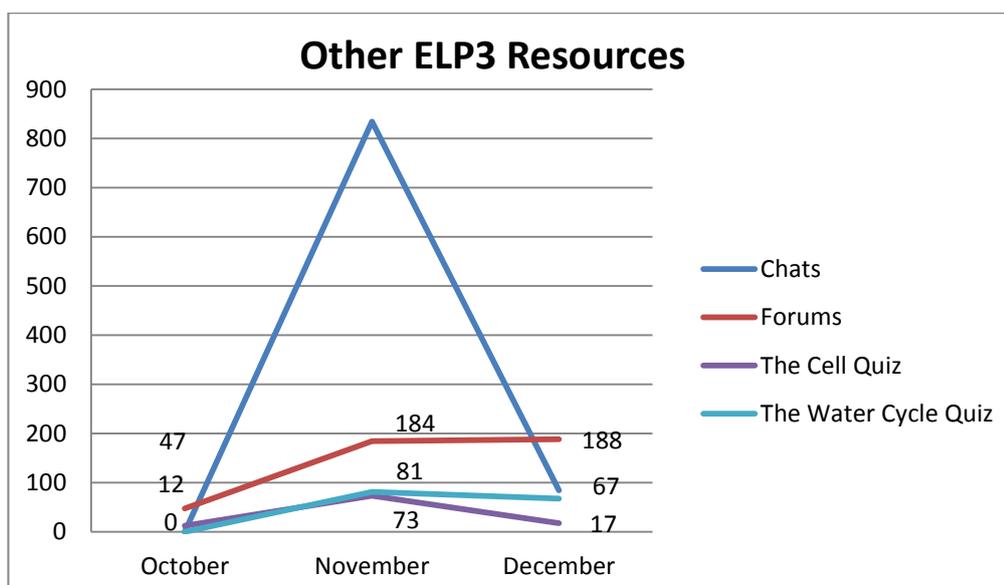
Figure 4.2. No. of hits in non-Unit pages

In summary, then, two points can clearly be made about the unit pages: firstly, signed content pages were the most accessed resource during the initial period for reasons explained in this analysis and supported by the other two data types as part of the triangulation method. In relation to the way in which participants accessed and used the learning platform, this indicates that the participants preferred to make more use of the signed features early on in the process. Secondly, there were significant numbers of participants accessing the English text for reading, as well as the chat sessions and forums for the whole period, which is discussed further below.

4.1.1.4 Chats

The ELP3 has five chat groups as part of the online chat rooms. In November 2009 the ELP3 course instructor initiated chat sessions, the first one being the Chat-1 Group. The first chat commenced on Thursday 12th November with 5 participants and altogether 75 chat messages were produced. On the second day, 7 participants in the Chat-1 Group took another attempt, and generated 99 chat messages over 35 minutes. Participants started typing and reading messages sent to each other, just as in other general chat rooms. The discussion was held inside the online class chat room and it was possible for everybody to see who wrote each message through their profile picture and nicknames, wherever applicable. All users participated in having a chat in English by reading and responding to messages. Everyone could read all messages after they clicked into the chat room; however when all participants used one chat room, there was a tendency for

many messages to be overlapped, as is the case in most chat rooms. For example, although user P25 replied to P13 in sequence, another user, P1, replied to P13 at the same time and so, on the screen, we can see the message order of P10, P13, P25 and P1. But even with overlaps, the participants remained in the conversation. Below are 19 lines of an extract from the Chat-1 Group chat session that took place on 13th November 2009 at 8.04 am and lasted 35 minutes (the entire extract is in the Appendix 3):

November Chat Group-1: Friday 13 November 2009, 08:04 AM

08:04: P10 *has just entered this chat*
08:04 P10: u topic water
08:06 P10: please reply me
08:07 P10: it important water of life.
08:08: P13 *has just entered this chat*
08:08: P25 *has just entered this chat*
08:08: P1 *has just entered this chat*
08:09: P18 *has just entered this chat*
08:09 P18: hi good afternoon
08:09 P18: what did u do topic today?
08:09 P10: did mean
08:09 P13: Hello P25
08:09 P13: How are you doing?
08:10 P1: topic cell a busy factory
08:10 P25: Hello, P13. How is your study going on?
08:10 P18: hello P13
08:10 P1: Hello P13
08:10 P18: how is all students going on??
08:10 P18: my study is going very well

On analysing the data, it is noticeable that participants P18 (34 messages) and P10 (28 messages) typed more messages. However, P13, who was noticeably more confident in using English, sent only 16 messages; he apparently left the chat session after being online for only 14 minutes. Participant P1, despite being online for 22 minutes, sent only 5 messages and P21 sent only 2 messages in 3 minutes, while P5 logged on twice briefly without typing anything (see *Table 4.8* below).

Participant	Number of messages	Online for minutes
P10	28	35
P13	16	14
P25	15	35
P1	5	22
P18	34	32
P21	2	3
P5	0	1

Table 4.8. Chat-1 Group on 13th November, 2009

Further analysis shows that participant P25 took part in a fair amount of chat in her 35 minutes, totalling 15 messages to a number of participants. The participants' views of the chat element of the ELP3 are highlighted in the data, when one person states: "It can help improving one's use of English". In general, it is possible to deduce that the students who had a weaker English level were less likely to interrupt conversations, but might ask others for help on how to express their opinion and comments in English. This happened sometimes in the chat session and sometimes in person, according to the ELP3 course instructor, Sibaji Panda (personal communication). The data in the questionnaire confirmed this: 44% of the group had difficulty in understanding the content of the chats, an issue related to participants' views about the instructional approach, and a quote from the interview data supported this as well: "(I) wanted a signed chat and then use English chat so can relate them (better)." Even though the chat sessions were varied in length, it was possible to see the amount of their output during the sessions.

Table 4.9 below shows how many times each learner in the BPPDS group, n=25, attempted the chat sessions.

Participants	Hits of 'chat talk'	Time spent in chat (mins)
P1	44	70
P2	18	28
P3	34	40
P4	32	45
P5	150	97
P6	11	16
P7	57	86
P8	36	119
P9	22	36
P10	216	286
P11	80	99
P12	13	34
P13	42	53
P14	87	119
P15	58	81
P16	6	24
P17	59	62
P18	90	76
P19	34	63
P20	112	87
P21	7	6
P22	47	55
P23	0	0
P24	134	80
P25	51	97

Table 4.9. Chat message attempts and length of access

As explained previously, the 1st session started on 12th November 2009. The Chat Groups 1-5 had different themes, which were related to the content that the participants inputted in the forum session as part of their forum task; this is described in more detail in the next section. It is also evident through the number of hits that P6, P16 and P21 attended the least, while P23 did not partake in the chat at all.

It is relevant to note here that this was the first time that most participants had contributed to a chat session in English, apart from texting their friends on a mobile phone or using other forms of instant messaging, such as Microsoft's Messenger. The chat sessions typically occurred outside of class time, usually in the mornings at the IGNOU computer lab. Participants interacted through the chat tool, even though they were all in the same computer lab and could have signed to each other instead. Even

though they were in the same proximity, most of them participated in communicating with each other by typing and reading. According to the records of the chat session above, participants were communicating by using English in real interaction through the chat. Clearly, the participants needed a chance to actually use the language with each other, rather than focusing on accuracy, such as grammar and spelling, and this provided them with that opportunity. Having spelling errors and grammatical errors may have actually led to more abundant communication in the group and to confirming messages through negotiation of meaning, as seen between P25 and P18 in their chat in Appendix 3. The students were checking the meaning of their message by themselves. The results show that adapting the chat feature leads to natural, spontaneous communication in English (Wanda, 2006) among the learners, even though it was held in a computer lab. This result does indicate that participants felt there was some potential in using the ELP3 as an instructional tool. *Figure 4.3* below illustrates in chart format the data presented in *Table 4.9* above.
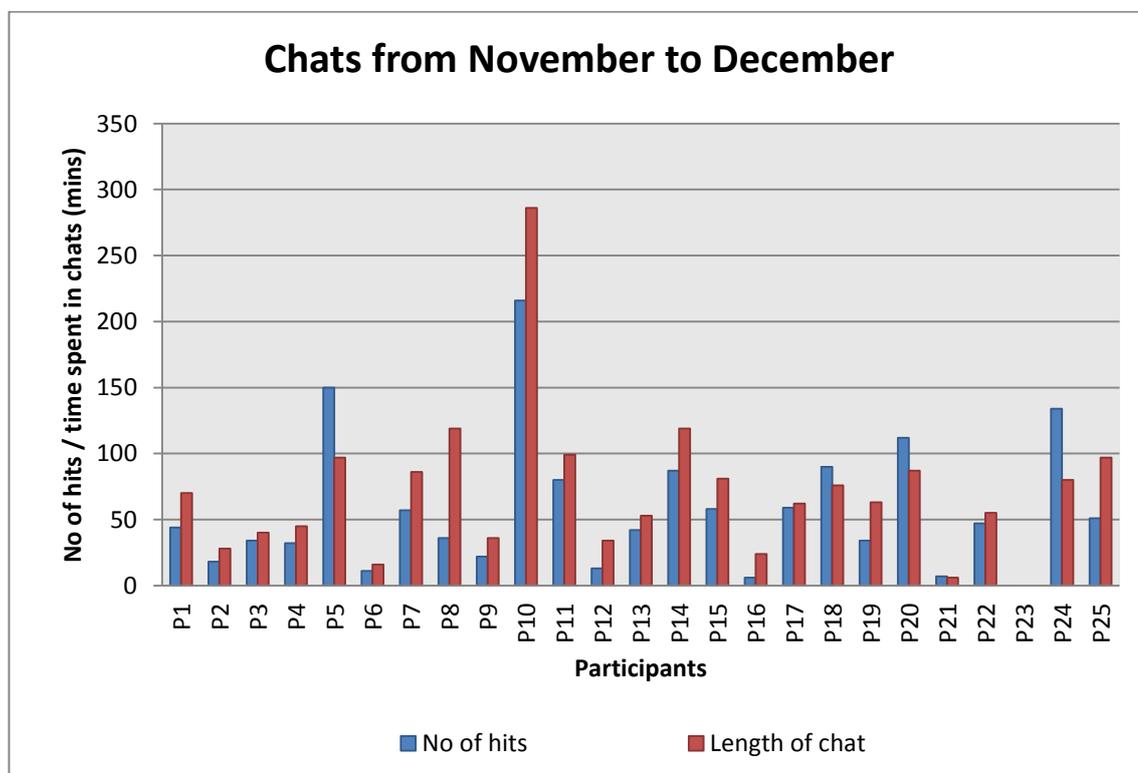
Figure 4.3. Hits of 'chat' talk and total time spent in chats (mins)

Figure 4.3 clearly shows that P10 had the highest number of chats in various chat groups in the month of November 2009 and briefly in December 2009. Everyone contributed apart from P23, who did not take part in any chat sessions. This figure also shows that P10 spent the most time in online chat during November and December 2009.

In summary, the results of the event log data, questionnaire and interviews, indicate that most of the participants were willing to take part in the chat sessions and this provides some insight into the participants' views of the ELP3 as an instructional approach. Some participants are still in the early stages of their English competency development, and their English skills might still not have suffced enough for them to contribute anything. The whole purpose of the chat sessions was to establish a natural learning link to the next section on the forums. Data from the chat sessions, however, suggest that the participants were not ready to discuss the topic(s) within the forums and they needed more time to be metacognitively ready for the new topic (Marschark, 2007).

4.1.1.5 Forums

With respect to use of the forum, participants were requested by the ELP3 course instructor to post their own comments to a discussion topic on 'The Cell as a Busy Factory' and write messages about their attempts to describe the topic in 250 words (see *Figure 4.4* below).
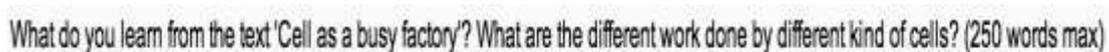
What do you learn from the text 'Cell as a busy factory'? What are the different work done by different kind of cells? (250 words max)

Figure 4.4. Task for the ELP3 participants in the forum

After posting their 250-word exercise, all participants were required to read other class members' work, and then were invited to reply directly to the contributor. The users were encouraged to comment about their peers' efforts. Regarding the usage patterns and uptake of the features of the ELP3, *Table 4.10* below shows that the group accessed the forum several times; the lowest was zero (P11) and the highest 45 (P3). Sixty percent of the participants accessed the forum more than 10 times but the length of time these participants spent on the forums varies from 32 seconds (P25) to 9 minutes 56 seconds (P21). The other participants accessed the forum less, i.e. less than 10 times,

but had the longest time spent on a forum, at 13 minutes 49 seconds (P7) as well as the shortest, which was 10 seconds (P15). In the word count for forum posts it is noticeable that a number of participants, P11, P12, P23 and P24, did not contribute at all in the whole of November and December 2009. Participant P20 contributed the highest word count, 250. P13 and P17 posted in the forum twice and the length of time they spent varies from 3 minutes 48 seconds to 8 minutes 5 seconds. It is not clear why only 4 participants (16%) posted comments when 96% of them accessed the forum. Only 1 participant, P11, did not attempt to do the exercise or access or post on the forum at all. While 96% of the people also participated in the chat session above, it had more responsive sessions. The ELP3 course instructor contributed only once, in P19's forum, offering advice; this may explain why the group simply viewed other peers' work but did not comment on it. Instead, they preferred to discuss the issues through the chat session. Although this type of assignment was a new activity for the participants, the log data indicate that students did engage with the activity, though maybe not to the extent expected. This implies that the participants did view the experiences offered by this online literacy learning environment in a positive light and were motivated sufficiently to engage with a new and challenging activity.

The cultural differences in India may also be taken into consideration here, with regards to how peers resisted commenting on each other's work (personal communication with the ELP3 course instructor) and left it to the ELP3 course instructor to make such comments, hence the scenario seen here:

Participant	Accessed	Forum word count	Longest length	Post Added	Length on post
P1	3	99	00:11	0	00:00
P2	37	85	01:18	0	00:00
P3	45	45	02:18	0	00:00
P4	10	203	00:47	0	00:00
P5	23	58	00:40	0	00:00
P6	14	55	02:51	0	00:00
P7	7	83	13:49	0	00:00
P8	21	89	00:49	0	00:00
P9	2	81	08:43	0	00:00
P10	2	127	00:13	1	02:35
P11	0	0	00:00	0	00:00

P12	3	0	00:51	0	00:00
P13	15	230	00:45	2	03:48
P14	29	69	00:38	0	00:00
P15	1	84	00:10	0	00:00
P16	39	81	01:37	0	00:00
P17	7	61	00:29	2	08:05
P18	34	104	01:16	0	00:00
P19	3	120	00:37	0	00:00
P20	21	250	00:38	0	00:00
P21	37	169	09:56	1	04:05
P22	8	52	00:56	0	00:00
P23	13	0	06:24	0	00:00
P24	33	0	09:39	0	00:00
P25	12	87	00:32	0	00:00

Table 4.10. Access results for the forum sections

Figure 4.4, below, shows participants' access frequency, actual message postings and reply times during the study period. There was only one task throughout the period but in total 21 participants uploaded a 250-word exercise and 24 participants accessed the forum. A total of 419 accesses were made. The access numbers shows participants were not just uploading the exercise (84%), but also reading other participants' posts (96%). A couple of the participants, P13 and P17, posted their message into another's forum twice, and P10 and P21 only once. The data from the questionnaire state that 60% of them did not understand how to navigate around the forum. So that explains why there is such a low number of posts here. In addition, the chat sessions offer the opportunity of live discussion about a theme, whereas the forum posts are more static. This could be another reason behind learners' less frequent use of the forum: they may prefer synchronous rather than asynchronous communication.
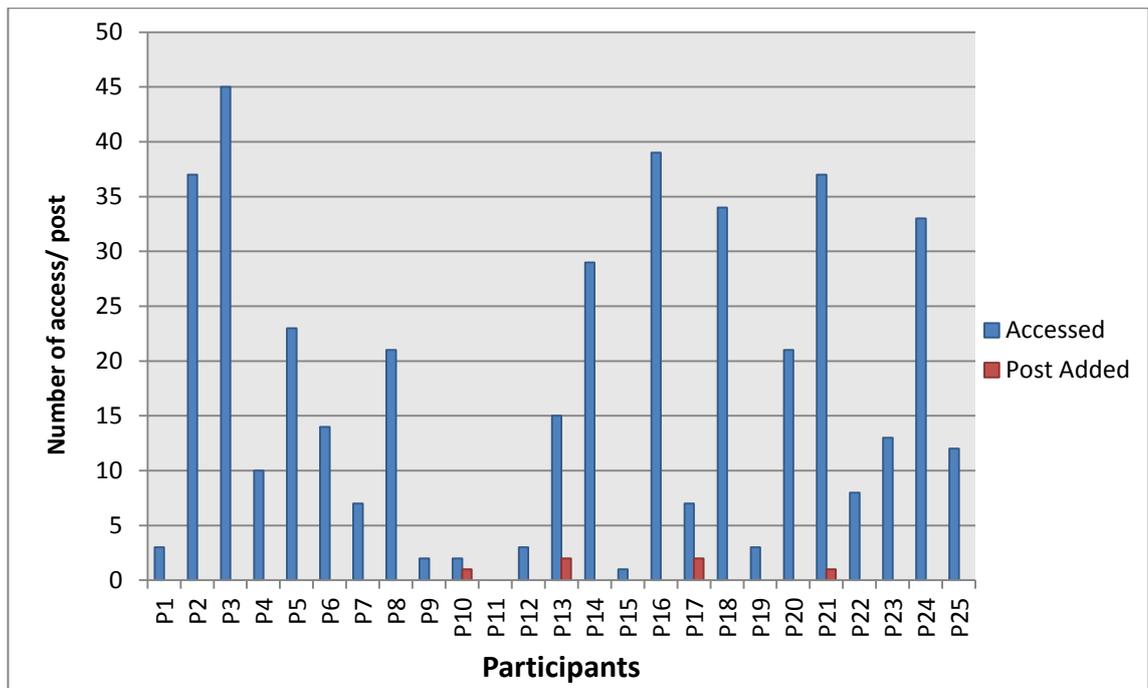
Figure 4.4. ELP3 Forum accessed

According to the numbers in *Figure 4.4*, P13 had only 15 accesses to the forum section. However, he had posted two messages and received no replies. P3 had 45 accesses and posted no messages. Examining the difference between P13 and P3 reveals that P3 seemed to read exercises while contributing nothing. Results from the chat section appear to indicate that participants were not hesitant of posting messages because of making errors and lacking confidence in their writing. However, with the forum being a static site, participants might have felt less comfortable about leaving their comments, unlike in the chat session. Therefore, the forum assignment should have been set by the course instructor more than once to encourage more posts/messages, and these should have been commented on more. Findings above, from the event log data and the questionnaire, show that all but four of the participants took part in the 250-word exercise, which is commendable, as it involved completing a specific written exercise. It is of particular interest to this study that no one mentioned this writing activity during the interviews, suggesting perhaps that the participants may not have wished to recollect any of the experiences here.

4.1.1.6 Quiz

The ELP3 course instructor set up two quiz exercises, covering grammar, on the ELP3 in order to review whether or not the participants had learned from the new topical article and its associated grammar topics successfully. The quiz exercises facilitated

self-study outside of the classroom and this was particularly effective because the instructor could base this on the words, sentences and texts that were taught in class. Each quiz contained 20 questions, mostly multiple-choice and fill-in-the-blank tasks that served as grammar exercises. As none of the participants submitted the quizzes, the automatically generated data from them have not been analysed as part of this study. Although both quiz exercises were accessed 141 times over the study period, no one actually completed a quiz. It is not clear why the participants who went to the trouble of accessing the quizzes did not submit them; it might simply be that they found this too difficult. Further research would need to examine the SCORM component of the platform for records of any unfinished exercises or non-submitted attempts; this would enable the course instructor or course designer to pinpoint difficulties that the ELP3 participants may have faced. For the purposes of this study, however, it is sufficient to note the suggestions made by the participants during the interview, i.e. the need for a built-in quiz using sign language. Addition of this feature is feasible with the Wimba Create software, as part of Microsoft Word, as is the option of providing the correct answers. However, this may lead to more dependency on the signed element of online learning and the purpose of learning English independently may not be well supported with such built-in features; rather, a facility for encouraging participants to call on personal internal logic and cognition skills would be preferable.

4.1.1.7 Summary of Event Log Data Analysis

The BPPDS participants had many additional demands on their time beyond lecture courses, including sorting out their accommodation. They originally had temporary lodgings 3 hours away from IGNOU and finally moved to accommodation that was a 15-minute walk away in mid-November. As 60% of the participants were from outside New Delhi, and no formal accommodation or social arrangements were made for them, the time that they were willing to spend studying was limited. Additionally, rather than engaging with the material throughout the period, there was a tendency for students to concentrate their effort into exam study weeks in order to save time to prepare for an international conference that took place in December 2009 at IGNOU.

It is possible to conclude that students generally liked the ELP3 platform. They identified 'ease of use' and 'accessibility' as positive aspects of the support and their preference for each resource was reflected in their usage. Unit pages, forums and chats were predominately used and participants requested more solutions to be available,

including set grammatical examples, as well as extra tutorial questions in forums, quizzes and assignments, and this opinion was conveyed in the focus group interviews. Usage of the ELP3 generally decreased as the module progressed, as we have seen, and it was especially noted that fewer participants accessed the resources made available in the final month of the study period. Unit pages access was predominant initially when they it became available. Like unit pages, the majority of the cohort's access to chats was made in the month the chat groups became available. The level of this access greatly decreased by December. However, the forums are the only resource that did not see a drop in usage in the month of December, and none of the interview or questionnaire data reveal why this is the case. In the following section, the questionnaire is discussed, as an understanding of the quantitative data continues.

4.1.2 Questionnaire Analysis

The second set of quantitative data came from a written questionnaire, asking students to rate various thoughts and feelings about using the ELP3, as explained in Chapter 3. After all 26 questions were completed, the researcher took the sheets back to the UK and converted them into an Excel worksheet. A total of 5 from 650 possible answers were left blank so calculations on the 'blanks' were converted into '0'. Hence tables of percentage of totals were created that better illustrate the findings. Looking at data within each of the tables, there is a significant correlation in their relationships, which demonstrates the internal validity of results The results of the questionnaire analysis were then triangulated with the event log statistics in order to validate the findings of the event logging. To complete the triangulation process, the researcher was also able to examine the interview data and ascertain that the results of all three methodologies were consistent and validated. The questionnaire was divided into four portions, the first two containing statements with which students were asked to agree or disagree. This section presents the questionnaire findings and corroborates them in relation to the event log data and interview results.

4.1.2.1 Liking

The first portion of the four questionnaire sections contained six statements on the students' experiences of working on the ELP3, such as "I like watching signed explanation", and were formed to identify the BPPDS participants' views on each of the resources in the ELP3 (see Appendix 1 (a) for this question set).

The results of the questionnaire: LIKING								
	Q1	Q2	Q3	Q4	Q5	Q6	%	Average %
1. I strongly agree	36	16	20	16	16	24	21	
								49
2. I agree	44	8	40	44	8	24	28	
3. I neither agree nor disagree	16	28	28	32	36	32	29	29
4. I disagree	4	36	12	8	36	16	19	
								22
5. I strongly disagree	0	12	0	0	4	4	3	

Table 4.11. Liking

The results in *Table 4.11* show that the group tended to be more favourable in this part, as the aggregation of both the 'I strongly agree' and 'I agree' components are 49% as against the 'I disagree' and 'I strongly disagree' components, which amounts to 22% of the total. Twenty-nine percent of the respondents chose the option 'I neither agree nor disagree'. From *Figure 4.5 below*, one can note that when the scale is reduced to two components, total positives (strongly agree/agree) and total negatives (strongly disagree/disagree), a total of 80% confirmed that they liked watching the signed explanation (Q1). The responses suggest that while nearly half of the students disliked the reading and writing exercises, they found doing the quiz exercises, browsing and chatting to their liking.
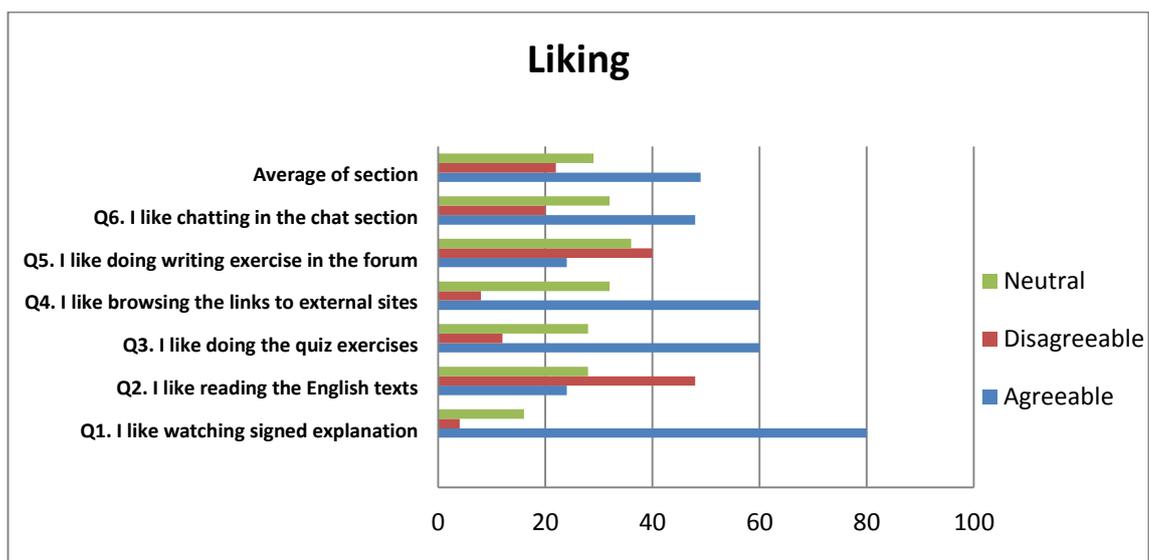
Figure 4.5. Liking: Combined agreeable, disagreeable and neutral components

The following comments from the interview data support these findings:

>"Order of learning sequence - watch video, read text, answer questions."

and

>"After text, video enhances one's learning."

The group's positive valuation of quiz exercises is quite a surprise here, as the event log data indicated that no one attempted the quizzes, though there were a substantial number of viewings. This may be attributable to the fact that the participants might not have felt ready to attempt the activity tasks, but they did appreciate the examples. They did comment on using the quiz in the interviews, as follows:

>"Signed Quiz…preferably using a face-to-face quiz interface."

Presumably this is why they did look but then decided to opt for the face-to-face option to be fully sure of the questions. A further example of this is:

>"Correct answers to be built into the Quiz so one could know what was wrong and what is correct."

Although the built-in quiz as part of the SCORM section does supply answers and results, it does not explain incorrect answers.

Another component, the external links, also proved favourable for 60% of participants, which indicates that the group valued the additional opportunity to practise the grammatical item in question, and partake in further reading on the relevant topical item. However, there remains the question of the level of English required by online learning platforms, which affects the ability to relate to the platform as an instructional tool, more of which is discussed in the next section. The interview data include the following comments about external links:

>"External links examples should be easy to understand, often the ones in ELP3 are very difficult to understand."

and:

>"Would be great if external websites could also be signed in ISL or BSL."

As mentioned earlier, in relation to the written component, although 40% of the group expressed dislike of that part of the course, all of the participants apart from four did undertake the written task in the forums. Forty-eight percent of the group also liked the chat sessions; and confirmation of this is indicated by the number of chat sessions that took place in the middle part of the study, November 2009. The interview data support the notion that participants liked writing chat messages:

"Enjoy able to chat outside of the peer group, i.e. with UCLan staff."

and:

"It can help improving one's use of English."

4.1.2.2 Understanding

The second aspect of the questionnaire related to students' understanding of features of the ELP3, and included eight statements, such as "I can follow the signed explanation clearly" (see Appendix 1 (b) for the question set).

The results of the questionnaire: Understanding

	Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	%	Average %
1. I strongly agree	16	4	4	8	0	12	4	20	9	
										40
2. I agree	36	16	20	71	12	20	16	60	31	
3. I neither agree or nor disagree	36	32	40	17	28	24	48	16	30	30
4. I disagree	12	44	24	4	32	28	28	4	22	
										30
5. I strongly disagree	0	4	12	0	28	16	4	0	8	

Table 4.12. Understanding

The results in *Table 4.12* indicate that the group tended to have insufficient understanding in this part, as the aggregate of both the 'I agree' and 'I strongly agree' components is 40% and 60% returned an undecided response. In *Figure 4.6* below, the

responses suggest that the greatest understanding was gained from seeking explanation from peers, as Q8 totalled 80%. Participants also showed that they did not quite understand the English text (Q2), the chats (Q6), the quiz exercises (Q3) or the explanation of lab tasks (Q7). The second most substantial result is 79% for question 4, so the group rated their level of understanding of external activities highly. Once again, this is an unexpected result, as the event log data returned rather low hits on these sites during the whole study period.
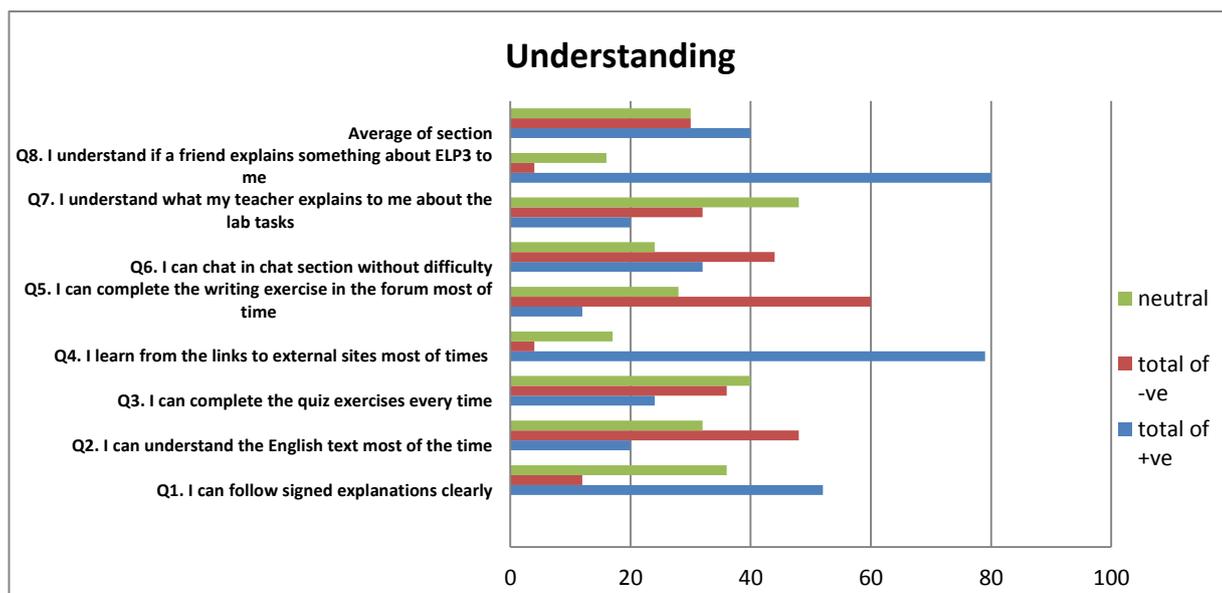
Figure 4.6. Understanding: Combined agreeable and disagreeable and neutral components

The comments from the interview also expressed some concern on the use of such sites, e.g. "External links examples should be easy to understand, often the ones in ELP3 are very difficult to understand". As mentioned, Q8 attracts 80% and indicates a favourable response to peer support (Q8). Whilst the event log data could not validate this finding, the interview data paint a mixed picture once again:

> "[Question: would working with a peer help?] No, even with a peer I will still have difficulty, maybe I need a teacher to go through it with me"

and:

> "The topic on Cell was beyond many of peer group's English abilities, so they lose confidence. They will need to build confidence stage by stage before they are introduced to the topic Cell. Hopefully ELP3 will be changed to reflect this difficulty".

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In relation to the signed component, the group returned a lesser figure, 52%, standing against 80% in the 'Liking' section. This may reflect some of the group's difficulty in following the ELP3 signed explanation due to regional variation, as explained in section 2.2. Here are some of the group's comments:

"I could not understand signed part or the English part, I have great difficulty following the topic"

and:

"The video as done by Sibaji is not 100% ISL but a mixture of ISL, BSL and IS. But it could help in learning a new way of learning such SL".

With regards to a further component, namely, topical item(s) reading, more participants in the group could not quite follow this activity (48%), against 20% who did. This contradicts the findings of the event log data, as this component attracts consistently high hits throughout the study period. This might be attributable to the need for repeated readings and using the signed explanation part to support the content of the topic, which indicates that the participants used the features of the ELP3 with some caution and the signed explanations were an important aspect of the instructional approach. Some comments from the interview data are also relevant to this issue:

"ELP3 texts are too long and very hard to understand, we rely on peer groups on that one, whereas on ELP1 we can manage on our own. We might be able to understand a little after viewing it several times."

and:

"I could follow text 50-50, sometimes I can other times I could not, one need to go through it a few times to get greater understanding."

The final component discussed here is the ELP3 lab tasks, where 32% of the group expressed that they could not follow the teacher's written/e-mail instructions, as opposed to 20% who could; the interview data support this finding and the matched result indicates that there were limitations in the use of the ELP3 as an instructional approach. The following are some comments from the group in relation to this component:

> "All three teachers do not work together; hence their e-mail exercises often crossed over and do not make sense to us. They could have worked together for a better guidance for us all."

and:

> "Although there were a lot of e-mails from the teachers, unfortunately we could not access them in the evenings or at our residence. The computer lab is only opened to us between 12-1 and 5-7 which is not enough for us. We would have liked to have done these work, all that promised have not been taken up. I have no confidence in myself at all; I am very stressed, and am very sorry about the whole thing."

The first two components of the Likert questionnaire, then, provide a level of triangulation from the event log data and the interview data, allowing the researcher a system for comparing and checking the results. The component covered in the next section, however, 'students' communication and classroom settings', can only be measured by the results of the interview in relation to the questionnaire findings, as the event log does not indicate students' feelings/comments on communication and the classroom setting or their feelings about and evaluations of using the ELP3. The section below addresses the frequency of this experience rather than indicating positive or negative feelings towards it.

4.1.2.3 Communication and Classroom Settings

The third section of the questionnaire related to the students' experience of communication and the classroom setting whilst using the ELP3. This featured six of the following types of statements: "I could manage on my own doing the ELP"; "My teacher helps me complete the ELP tasks for me" (see Appendix 1 (c) for the question set). As explained in Chapter 3 (section 3.4.1.2), this section made use of a four-point scale, rather than the five-point scale used for the previous two portions of the questionnaire, as the middle range was removed to avoid a central tendency for the frequency range.

The results of the questionnaire: Communication & classroom settings	Q1	Q2	Q3	Q4	Q5	Q6	%	Average %
1. Always	8	4	13	4	0	4	5	
								33
2. Sometimes	60	33	38	17	12	8	28	
3. Once in a while	32	54	46	71	68	44	52	
								66
4. Never	0	8	4	8	20	44	14	

Table 4.13. Communication and classroom settings

The results in *Table 4.13* indicate that the group veered towards the less frequent end of the scale in relation to communication issues, i.e. in the 'Once in a while' and 'Never' components, which amounts to 66% of the total, as against the average of the 'Always' and 'Sometimes' components, which registers at only 33%. The responses here suggest that while students were not generally willing or able to help each other with ELP3 tasks (Q5, Q6), they did welcome the support of a teacher, though this person was seldom available (Q4).
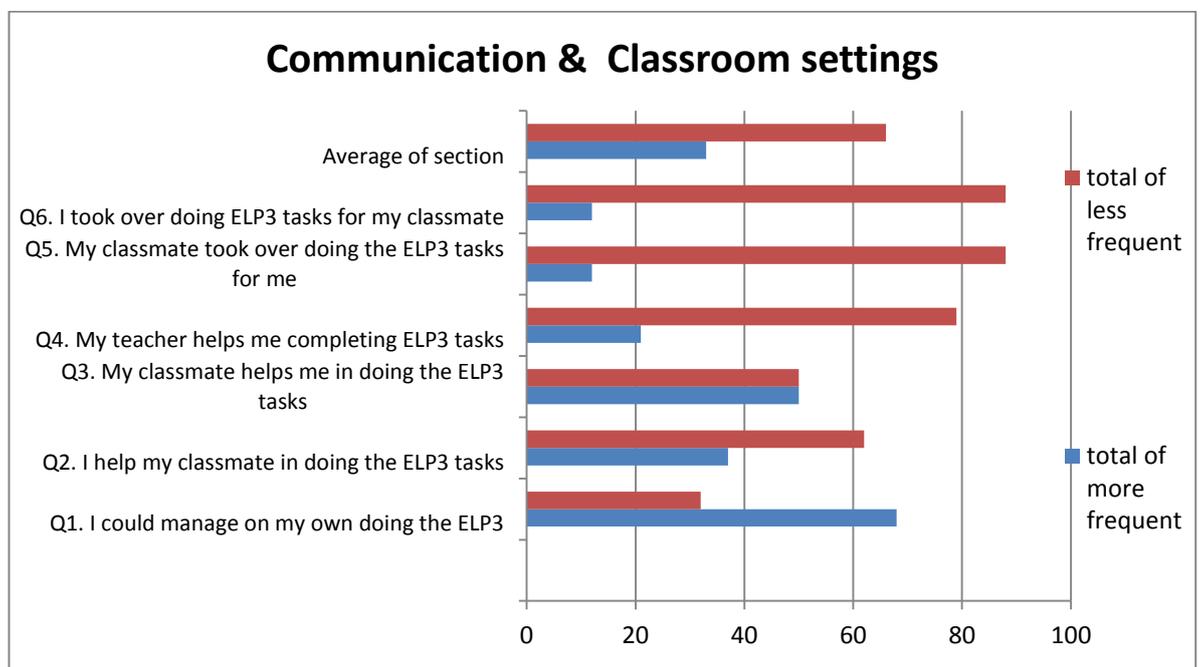
Figure 4.7: Communication & classroom setting: Combined more and less frequent components

The internal validity shows that this section contains the highest scoring results of all

sections in the questionnaire component. Results clearly indicate that members of the group were not able to help each other, as the total at the less frequent end of the scale of both Q5 and Q6 tallies at 88%. This is confirmed by statements from the interview data:

> "The peer group has varying technical and linguistics skills that could create problem here."

and:

> "Teachers should work with peers and go through examples before leaving ourselves to do it. Maybe can work as group initially then individually."

It is interesting to note that some participants did feel that their class peers made attempts to help out but the difference in the figures is negligible, i.e. 38% against 33% from the opposite perspective. Therefore, regardless of the willingness to support their peers, they were usually unable to do so (62%). The interview data indicate the following:

> "If it is too difficult to learn, one would lose confidence quickly. So it has to be arranged to support new learners."

Lastly, the results indicate that the group would have welcomed support from the teachers but such opportunities were remote. The following comments are taken from the interview data:

> "I can use WORD, actually I used it to apply here. Teachers could show us more as to how one would use ELP3."

and:

> "I need a teacher who can explain my queries so in future I will be able to do same when I teach. I would wish to avoid any incorrect feedback as it could mean I also give wrong feedback in future."

But 60% of the group sometimes felt they could manage on their own:

"The ELP helps one to learn on their own and without the presence of class teacher".

The next and final questionnaire section examines the group's feelings and evaluation of the ELP3 itself and shows that peers are not confident enough yet to support each other with IT/English learning.

4.1.2.4 Feelings and Evaluation

The fourth part of the questionnaire aimed to establish the students' feelings and evaluations of their experiences of the ELP3, and included six statements, such as "I find ELP3 activities very interesting" and "I get tense when I do the ELP3 activities and tasks" (see Appendix 1 (d) for the question set).

The results of the questionnaire: Feelings and evaluation								
	Q1	Q2	Q3	Q4	Q5	Q6	%	Average %
1. Always	16	28	4	4	4	20	13	
								52
2. Sometimes	40	48	20	64	28	32	39	
3. Once in a while	36	24	64	28	52	40	41	
								49
4. Never	8	0	12	4	16	8	8	

Table 4.14. Feelings and evaluation

The results in *Table 4.14* indicate that the group did not tend to turn to either polar end of the scale in the 'feelings and evaluation' section. The responses here suggest that there was no strong preference towards any particular activity, with some students finding the tasks interesting but a slightly higher number finding them quite boring. The participants were quite in agreement that it was hard to complete the tasks on time in the lab. In summary, the data here are contribute to an understanding of the participants' personal evaluation of their use of the ELP, and the results indicate that the group evaluated some aspects of using the ELP3 positively; Q4 and Q5 meet internal validity by indicating that the group were quite relaxed in using the ELP3, with 64% stating that they were sometimes relaxed, whilst 52% reported feeling tense only 'once in a while' (see *Figure 4.8* below).
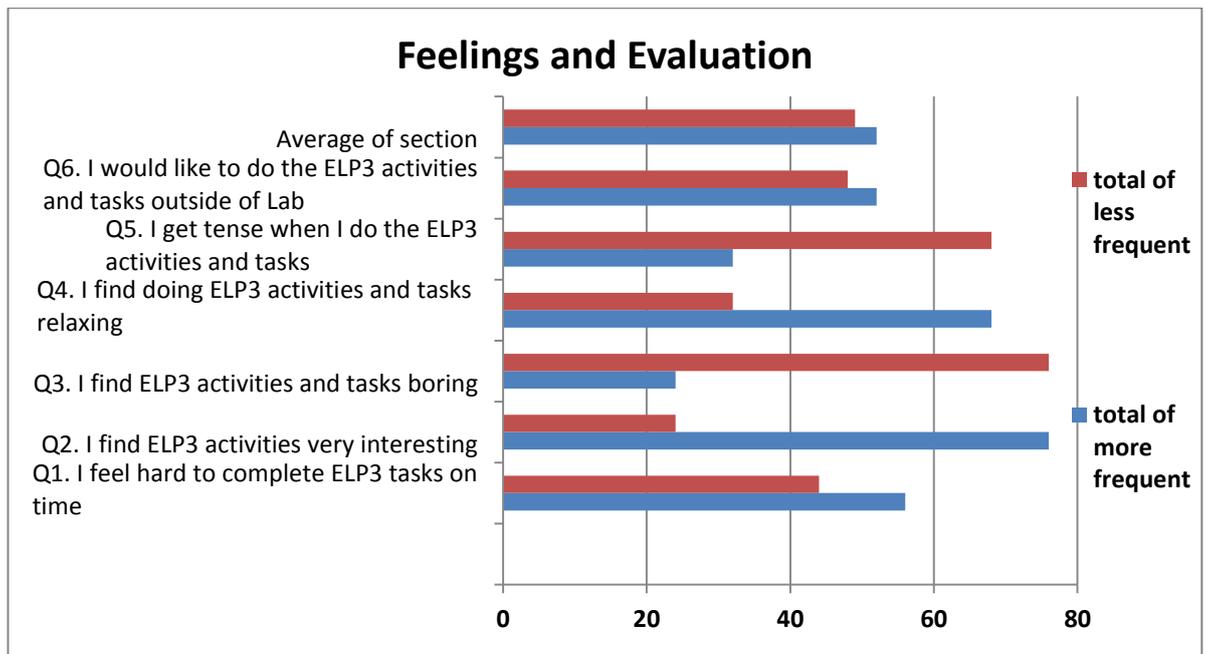
Figure 4.8: Feelings and evaluation: Combined more and less frequent components

However, the feedback from the interview also suggests that there was some negativity about the ELP3 itself, especially for those participants who had been using the ELP1. The following are some positive and negative comments regarding its use:

"Whole purpose of ELP3 is to learn English, would like to be able to read and write like English user."

and:

"I had a poor education. Despite this I taught Basic English with my colleague at New Delhi on a different ELP to deaf kids. I coped that level of English reasonably well. The ELP3 at BPPDS is so different and at much deeper level. There should be progression steps from ELP1 to ELP3."

For some participants, using the ELP3 raised difficulties, as indicated in the results for 'once in a while' at 52%. This result represents half of the group, and the difficulties in using the platform were especially noticed for the group of participants who had used the ELP1 previously. This is presumably due to the challenge of moving to a different level, as stated in some of the interview data comments:

"Unlike ELP3, it does not relate to class activity nor does it contain stories, which I feel is important in developing literacy skills, as it encourages

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receptive skills. I would like to practice this in ELP3 also at BPPDS the
level is harder, maybe too big a gap from College."

The final point to make here relates to Q1 and Q6 of this section of the questionnaire. Q1 confirms that a lot of participants experienced difficulty in completing the ELP3 tasks due to a lack of time and clear guidance from the teachers, as mentioned in earlier sections. A total of only half (52%) of the participants expressed a desire to use the ELP3 outside of the computer lab at IGNOU, though several times during the interview, participants expressed a wish that they had access to a laptop or extra time outside of the lab:

"I also find lab during evening heavy going as my mind becomes tired. It
will be different if I had access to a laptop at home, so things will become
easier. I really need more time to absorb all of this, it does not help that I
had a poor education."

and:

"I actually am still half way through completing them that is without doing
ELP3 properly. To have a laptop at home would enable one to carry on
working if one could not complete it on time."

4.1.2.5 Summary of Questionnaire

The results of the four questionnaire components indicate varying degrees of positive appreciation and dislike among the participants, as well as variation in the frequency of communication in the various settings and some differences of opinion when evaluating their experiences of ELP3 and of the computer lab. Regarding the use of the ELP3 features by participants, this indicates that some features were preferred over others, and linking this with the frequency data from the ELP logs, we find that indications that the two sets of data support each other. For instance, the use of signed explanations was clearly favoured by the participants and was also accessed frequently, hinting that this method not only establishes an understanding of concepts firstly in L1 but also leads to a more effective level of understanding of the L2 components. The use of the ELP3 as an instructional tool, which the second research question poses, seems limited and signed explanations are required by L1 sign language users. One aspect that researchers

need to explore further is the implication of limited peer group support; while it is understandable that this was a new experience for everyone at this level, this activity should not remain as limited in future. The next section considers a further type of analysis: qualitative analysis of the focus group interview.

4.2 Qualitative Data Analysis

Having considered the issues that the qualitative analysis highlights, it is now relevant to discuss the features of the analysis carried out on a qualitative level. For this purpose, the focus group interviews were held. The qualitative aspects that this research activity brought to the study include the opportunity for participants to openly discuss the use of ELP3 in an encouraging group context, and, more importantly, the facility to express their views and experiences in their first language, ISL. This research activity was established specifically with this purpose in mind and this section describes the focus group interview method and its effectiveness in detail.

4.2.1 Keywords

Unlike quantitative analysis, examination of qualitative data, particularly focus-group analysis, often occurs concurrently with data collection. Krueger (1994) suggests that a helpful way of thinking about this role is to consider a continuum of analysis ranging from the mere accumulation of raw data to the interpretation of data. The analysis continuum therefore comprises raw data; descriptive statements; and interpretation. It is important to point out that analysis does not take place in a linear form and that one part of the process overlaps another. 'Framework analysis', as described by Ritchie & Spencer (1994), is 'an analytical process which involves a number of distinct though highly interconnected stages'. The five key stages outlined are: familiarization; identifying a thematic framework; indexing; charting; and mapping and interpretation. The other distinctive aspect of framework analysis is that although it uses a thematic approach, it allows themes to develop both from the research questions and from the narratives of research participants. After coding the focus group interviews, as described in section 3.4.3.2 on page 53 above, and bearing in mind the continuum analysis as discussed above, a table was created (see *Table 4.15*, below). This table shows the keywords that were developed, along with the number of annotations that were associated with these keywords, during the students' signed dialogues:

ELP3 Open ended questions: 7 groups of 3 or 4 participants at IGNOU's BPPDS			
KEYWORDS	ANNOTATIONS	OCCURRENCES	PERCENTAGE
HELPS	23	60	14
DIFFICULT	60	81	37
SUGGEST	48	48	30
VIDEOS	6	6	4
INTERNET	11	16	7
CHATS	3	7	2
MANAGEMENT	2	2	1
GENERAL	8	8	5
TOTAL	161	228	100

Table 4.15. Number of annotations and occurrences

There are 161 annotations in total, and these all fall into a category associated with one of the eight keywords. The mapping process, a system of combining the evidence in order for the research aims to steer the analysis, can clearly be seen here, as explained in section 3.4.2.2 on page 49. The keywords occur 228 times in total. *Table 4.15* above shows the number of annotations and occurrences for each. The keyword DIFFICULT was associated with 60 annotations, which represents 37% of all annotations, whereas only 1% of annotations were associated with the keyword MANAGEMENT. Each keyword is now described in terms of how it was created during the coding of the group interview data.

4.2.1.1 Keyword 1: HELPS

The keyword HELPS captures those features of the ELP that were perceived as positive and helpful by the students. Ultimately, annotations associated with this keyword constitute 14% of all annotations. The keyword occurred in the group dialogues in one of two contexts: either in response to the first question ('Can you give me an example of

your best experience of the ELP3?') or as part of another topic that students raised themselves. Two dialogue extracts relevant to this keyword are as follows:

"At the beginning, using the units was helpful and clear. It enabled one to progress quickly. I also like the link between an hour of teaching and two hours at the lab."

"As I enrolled late, I was introduced to ELP3. I was able to learn if I was right or not immediately, through feedback within ELP3. I learned IT, such as editing clips, with the help of peer students. All deaf students have a similar level of English, which is at a beginners' level, so ELP3 is ideally designed for that."

These coded dialogues show how the keyword was identified, as HELPS includes words such as 'helpful,' 'ideally' and 'like'. Taking the analysis a step further, the keyword HELPS can be divided into several sub-categories, such as SELF-SUFFICIENT, which describe the way students were able to learn English through the ELP3. Another sub-category is PEER SUPPORT, which students considered to have two advantages: firstly, it meant that everyone was working at the same level, and secondly, students were able to support one another to make progress through the ELP3 (see the tree diagram of the HELPS sub-categories in *Figure 4.9* below).
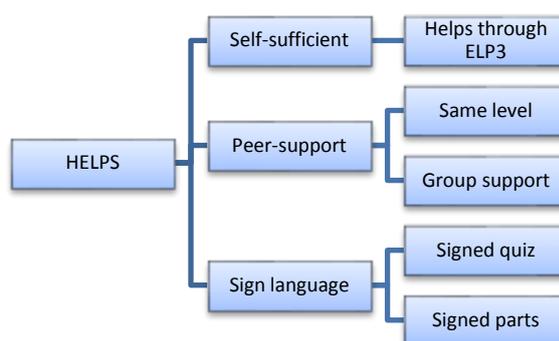
Figure 4.9. Tree diagram of HELPS sub-categories and its attributes

Comments that fall into these sub-categories include:

"ELP3 is a self-learning activity when teachers are not around" (SELF-SUFFICIENT)

and:

"At first it was hard to create power points but through peer support I am now able to use it with confidence; I had never used any kind of IT before" (PEER-SUPPORT)

Various interview data such as this are included to enrich the analysis presented in the earlier sections of Chapter 4.

4.2.1.2 Keyword 2: DIFFICULT

The keyword DIFFICULT related to an aspect of the ELP contact or the experience of using the ELP3 which was perceived as problematic by the learners. Thirty-seven percent of annotations were associated with this keyword. As with the previous keyword, DIFFICULT occurred in group dialogues where students were either responding to question 2 ('Can you give me a specific example of your worst experience?') or making a point in the context of a topic that they raised themselves, as in the following comments:

"I wanted to start my BA studies with confidence but at the start, the travel from home was very tiring. I was pleased that we could move very close to IGNOU. But I still find studying hard. I became bored, but the other deaf teacher was good and I was able to relate to things visually. I also enjoy Sibaji's session, but I find the lab sessions hard. Also I struggle with the CELL exercise as I find it hard to relate things. Part of the problem is lack of practice. I never had any study skills that would have helped me to deal with new things better."

"It is not a degree course yet, it's a level zero to prepare us for the three year degree course. I still find learning English tough, as do many other people in my peer group. I do not mind if I can understand at least three words of a sentence, but in the CELL test I could not recognise much, so my confidence level sank. This is also true for many of us in our peer group."

Words such as 'tiring', 'bored', 'lack', 'should have', 'sank', 'hard', 'tough' and 'difficulties' were all considered to be associated with the keyword: DIFFICULT.

As with HELPS, there are several sub-categories within the keyword DIFFICULT to which certain characteristics may be attributed. For example, students reported difficulties in following a teacher's signing skills, and this can be associated with the sub-category TEACHER. The absences of teachers were also raised a number of times, and fall into the same sub-category. A total of five sub-categories (see the tree diagram of the DIFFICULT sub-categories and its attributes in *Figure 4.10* below) have been identified altogether: HARD has five attributes, EMAIL has two attributes, TIME has four, ELP3 has three and TEACHER (mentioned above) has four.
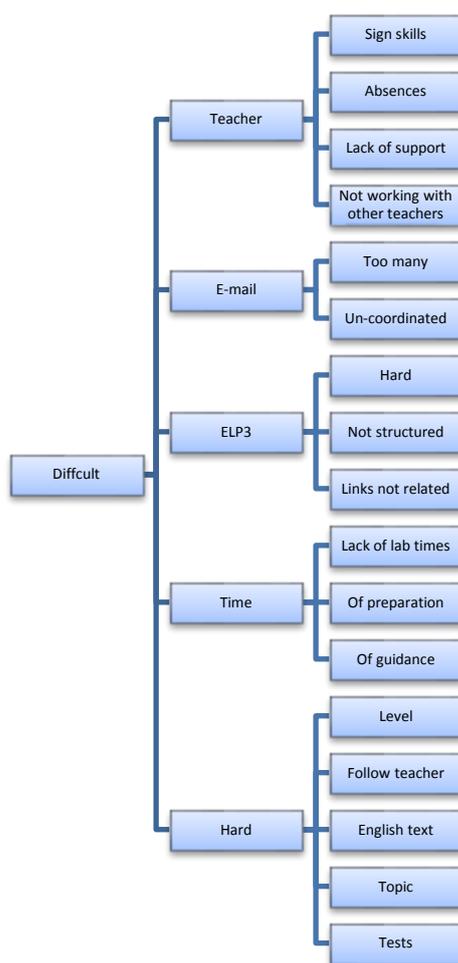
Figure 4.10. Tree diagram of DIFFICULT sub-categories and its attributes

TIME includes comments about a lack of lab time that created difficulty for the groups; lack of learning time; lack of preparation time; and lack of time for guidance. The following are some of the dialogues for TEACHER (absence) and TIME (lack of time):

"Here likewise, I was full of hope, but my confidence level has sunk. I used to be ok at college, gaining confidence, but it disappeared here. It was due to too many absences by the teachers, which created the problem."

"English lessons by Sibaji and Dharmesh are enjoyable but there was not enough time to spend on the power points. Actually there is not enough time for anything at all, which is a disappointment."

4.2.1.3 Keyword 3: SUGGESTS

The keyword SUGGESTS arose after a number of comments were made that involved suggestions from participants. Thirty percent of all annotations were classified in this way. As with the previous two keywords, these comments were made either in response to the questions that were asked or in the context of an issue that was raised, unprompted, by students. Some comments associated with this keyword are as follows:

"There are not enough opportunities within a two hour lab session so it would be better to follow the BA English learning programme within the time allocated; as there is not enough face-to-face contact time with teachers, one needs to work step-by-step, preferably through e-mail, then onto ELP3, work with peer groups, then individually. Some peers could not work alone."

"Technology is vital nowadays; most of us foreigners know very little; so there should be a better preparation for us novices. Face-to-face teaching is of great importance; working through the internet is fine but it could not replace the value of face-to-face teaching. But of equal importance is adequate staffing to teach the course."

The examples found above contain words such as 'would be', 'manage', 'need', 'opportunities', 'better', 'importance' and 'adequate', and phrases such as 'step-by-step' and 'work their way up'. All of these can be associated with the keyword SUGGESTS. As with the two previous keywords, there are several sub-categories within the keyword

SUGGESTS that represent certain characteristics (see the tree diagram of the SUGGESTS sub-categories and its attributes in *Figure 4.11* below).
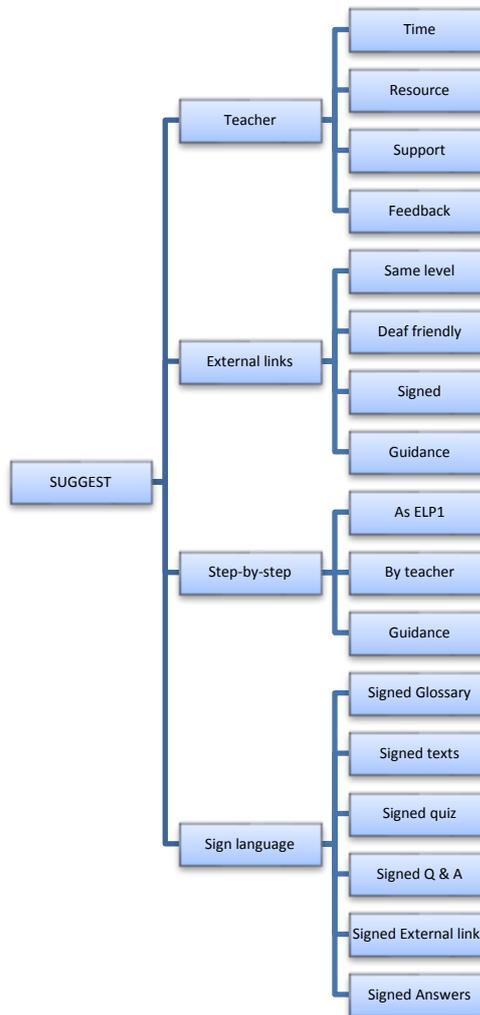
Figure 4.11. Tree diagram of SUGGESTS sub-categories and its attributes

Altogether four sub-categories have been identified here: SIGN LANGUAGE with six attributes; STEP-BY-STEP with three attributes; EXTERNAL LINKS with four attributes, and TEACHER with four attributes. In TEACHER, for example, the attributes are: time, resources, support and feedback. Here are some example dialogues for TEACHER (resource) and TEACHER (feedback):

"We need more teachers so that there is some back-up should teachers become ill, etc."

"I need a teacher who can explain the answers to my queries, so that in future I can do the same when I teach. I want to avoid being given any incorrect feedback now, as it could mean that I also give wrong feedback to others in future."

4.2.1.4 Remaining Keywords

The keywords VIDEO (4%), INTERNET (7%), CHATS (2%), MANAGEMENT (1%) and GENERAL (5%) were identified after looking at the comments that students made; the annotations containing these constitute 19% of the total number of annotations. These comments were made in response to all of the open questions that were asked. Such examples include:

VIDEO: "With video and guidance it helps deaf people to learn."

INTERNET: "A new way to study."

CHATS: "I enjoy being able to chat outside the peer group, i.e. with UCLan staff."

MANAGEMENT: "There was no time for the ELP3 in class."

GENERAL: "The education system is different with Moodle as it is based on a Western style, which I find helpful compared to the traditional subjects I learned here."

These annotations fit more naturally with their respective keywords than with the first three keywords reviewed above. These keywords were created in order to provide appropriate categories for the remaining annotations.

Various interview data are already included to enrich the analysis in the earlier sections of Chapter 4 as part of the triangulation process.

4.2.1.5 Summary of Student Focus Group Interview Findings

The results of the coding process indicate that the findings are slightly positive: if annotations in the HELPS category (14%) are added to those in the SUGGESTS category (30%) – which may be considered as positive indicators – and to those associated with all the remaining keywords (19%) except DIFFICULT, the total is 44%. This can be taken to show that the group considered the ELP3 to be a favourable route to learning English, and an introduction to the online learning platform, especially when compared with traditional textbooks, for example. However, 37% of annotations include an expression of some kind of negative view towards the role of the ELP3, or more specifically the environment around the ELP3, i.e. the staff, the hours available, the resources, the new style of learning and the like, and this is not insubstantial. There is a clear indication that participants would have liked more signed parts in the ELP3 and more staff support; this suggests that the group are not ready for an English-only platform and this level of independent study. There are, then, barriers and difficulties that need to be looked at before the group is able to enjoy the maximum benefit from the new learning environment and technology.

The focus group interview has helped the research to establish many categories that could be used in the triangulation process in order to identify reasons, strengths, weaknesses and other general issues within the ELP3. It aided the researcher in ensuring the reliability and validity of the data and also provided additional information about the use of the ELP3 features and the participants' views of the ELP3 as an instructional approach. The interview also helped to discern participants' accounts of their learning and hands on experience, and communicative behaviours within the ELP3 and around the computer lab whilst using the ELP3. Furthermore, the interview enabled the participants to reflect on their collaborative learning experiences and their perceptions of the experiences, attitudes and beliefs of the group and of the online context. This research method was also used to investigate students' engagement with the ELP3 as a whole, rather than examining the individual components (e.g. forum-based activity). This facilitated a broad, rather than fragmentary, impression of how the users related to online learning. Interviews further explored the quantitative findings by providing personal and psychological reasons for the activity report data, and by enabling a deeper level of personal views and feelings to be gleaned.

4.3 Summary of Study Results

The results presented in this chapter cover findings on each of three analyses, namely event log data, questionnaire and interviews. Triangulating these data shows that the results emerging from the three methodologies often support or elucidate each other, resulting in a fine-grained picture of usage patterns and user engagement with the online learning platform. Therefore, the approach to data in terms of the "validating quantitative data model" (cf. section 3.3) was useful for shedding light on the research questions.

In terms of usage patterns of the ELP3 by deaf students, the event log data as well as some of the information gleaned from questionnaires and interviews support the conclusion that the students were engaging with the online learning environment to a significant extent. Having been accessed 9,096 times over the study period, the ELP3 on the whole was clearly well attended

A more mixed picture emerged from the data with respect to the quality of the experiences expressed by the group of learners. It was clear from all three data sources that the students appreciated the signed explanations, which were accessed frequently and were the component that learners liked the most (80%), as these gave them the necessary grounding to tackle the topical item(s). As the unit pages featured support from the signed explanations at the start of every topical item, this seems to have facilitated reading, which itself is one of most essential steps in tackling English to build comprehension skills (Koda, 2007). The group clearly demonstrated engagement with reading, as this accounts for almost two thirds of the whole English learning activity.

Another important theme is the set-up of the peer group in this research, as evident in the access to forum and chat sessions, in questionnaire responses related to peer support, and in related interview comments. Interactive activities are potentially an important component in a learning environment as interacting is a confidence-building activity and an excellent way to develop one's personal internal logic and cognition skills (Marschark, 2007). This applied particularly with respect to writing skills. As Straetz et al. (2005) say, writing skills have always been one of the most difficult aspects of English for deaf people, and many find it difficult to express their meaning in writing as fully as they can in sign language (Webster, 2007). By discussing their writing attempts through chat sessions, the participants were perhaps able to further enhance their English skills.

However, learners clearly also found the English content challenging (for instance, 48% of learners actually disliked the readings), and experienced various problems with the learning environment, which are evident in the questionnaire responses as well as the interviews. For instance, with respect to online quizzes it appears that learners were merely viewing the questions in the quizzes, as no one submitted their attempts. Viewing the results of their attempts would have helped us to pinpoint their strengths and weaknesses in particular areas of English grammar, but this was not possible. Use of this feature could perhaps be addressed in a future study.

Overall, the event log data, survey results and focus group interviews helped create an effervescent story of how BPPDS students used the ELP3 to interact, collaborate and develop English skills within the context of a course-related module, "English for deaf learners in H.E.", in a blended learning environment. In the next chapter, the implications of the above findings for the ELP3's intrinsic potential as an English learning platform are discussed. The chapter also provides some thoughts on, and suggestions for, future English learning platform projects.

5.0 CHAPTER 5 - CONCLUSION

The aim of this research has been to study the user patterns and engagement of ELP3 participants who embarked on a blended learning course of English as a second language. The research draws conclusions from the participants' usage online, experiences, opinions and attitudes, all collated through event log data, a questionnaire and a focus group interview. The study has shown that the ELP3 has intrinsic potential as a learning support tool and that, through a blended learning approach, it enhances the participants' development of English as a second language. This potential is achieved through a bilingual approach, using sign language and English.

5.1 Summary of Results and Implications

These conclusions are supported by the survey results, which show that a large proportion of the learners thought highly of the ELP3, and a majority found its functions interesting. Also crucially, the question in the 'Communication and Classroom Setting' section of the survey asking whether they could work on their own, an enquiry that equates with the notion of independent learning, resulted in a majority (68%) in favour, which is promising. It is noted, however, that most participants (66%) reported a negative 'overall feeling' about the 'Communication and Classroom Setting', as seen in *Table 4.14*. This concerns both peer support and teacher support, more of which is discussed below. On close investigation of the study results, it is clear that there are internal and external factors that created pressures within the context of this study.

5.1.1 Literacy and Deaf People

There is inherent difficulty in the learning of literacy for deaf adults, as perhaps is hinted at in the 'Liking' section of the Likert survey, where the question 'I like reading the English texts' returned with a total of 48% dislikes; similarly, the statement 'I like doing writing exercises in the forum' returned 40% dislikes. The following comments from the focus group interview regarding the English learning components also suggest an inherent difficulty with literacy: "ELP3 texts are too long and very hard to understand, we rely on peer groups on that one, whereas on ELP1 we can manage on our own"; "We might be able to understand a little after viewing it several times"; and "I understand signed explanations but could not relate it to English text". Interestingly only one participant commented on the need to be able to write: "Whole purpose of

ELP3 is to learn English, I would like to be able to read and write like an English user". This quote implies that while the learner's attitude is positive, the ability is still quite beyond them. And finally, a comment from the chat sessions illustrates the value of being able to discuss issues firstly in sign language and then in English: "Wanted a signed Chat and then use English chat so can relate them (better)". This may signify a need for metacognitive skills, which, once achieved, allow one to develop communication skills in English more robustly (Marschark, 2007).

5.1.2 External Pressures of Access to Technology

The external pressure of access to technology compounded this study. This is particularly an issue for developing countries such as India, although India's recent economic reforms may now preclude it from this category, as it is one of the fastest growing industrialised countries.[9] This pressure is seen in the responses to the statement 'I would like to do the ELP3 activities and tasks outside of the Lab' in the 'Feelings and Evaluation' section, where a total of 48% confirmed that they could not do so at the time. Comments from the interviews appeared to support this as well:

> "I also find lab during evenings heavy going as my mind becomes tired. It will be different if I had access to a laptop at home, so things will become easier. I really need more time to absorb all of this, it does not help that I had a poor education."

> "Lack of laptop also a major issue for many, especially for someone from poor region/country."

> "We also really need to have a laptop to catch up with work not done. I do not know when IGNOU will provide us laptops as they promised us one. It does not help at all during tests/exams without the laptops. Editing takes up a lot of time so did the drama rehearsals. I hope my friends in Bombay will help raise money for me to buy a laptop."

Furthermore, a total of 61% of the group accessed the ELP3 outside the teaching hours of 9am to 5pm but all of them did so at IGNOU's computer laboratory class, which

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[9] http://en.wikipedia.org/wiki/Newly_industrialized_country as accessed on 28th September, 2011

substantiates the issue of the lack of access to technology outside of campus.

5.1.3 Course Co-ordination with E-Learning

Lack of internal co-ordination and guidance increased students' anxiety, and it is clear that they would have welcomed further opportunities for support within the ELP3 sessions, as indicated by a total of 79% of the group. In any learning environment students should feel able to approach an appointed person who is able to guide them through any difficulty but this was clearly not as readily available as necessary, hence the group's response, for instance, to the statement 'I understand what my teacher explains to me about the lab tasks' returned a total of 32% of participants not being clear. This level of confusion among students can lead them to feel less motivated. It is beneficial all round for students to try to comprehend the texts and do the exercises on their own. As Schumaker (cited in Hilzensauer, 2010) suggests: "students become more interested in their own development in English when they assume the responsibility for their own learning". People have different learning needs and learning strategies, however, and the ELP3 does need to provide the facility to allow them to proceed entirely on their own and repeat each step as often as required without the fear of making mistakes or advancing too slowly. Without this provision, students who struggle to complete tasks can lose motivation, especially if peers are unable to support them due to a lack of clear guidance in how to move between the ELP3 and the taught modules in the class as part of blended learning; this shows the importance of them both being closely related.

5.1.4 Students' Skill Level

Ensuring adequate student skill level, matched to the ELP3's 'intermediate' level English, created internal pressures, along with inadequate assessment of students' existing English, technology and study skills before joining the course. This pressure relates to the strong foundation in the essential skills of reading, writing, comprehension and cognition, as well as metalinguistic skills, that students must develop when embarking on a second language learning course (Marschark, 2007). From the first six of the survey questions in the 'Understanding' section, which concerns such skills, the statements 'I can understand the English text most of time', 'I can complete the quiz exercises every time', and 'I can complete the writing exercise in the forum most of time', returned with 48%, 64% and 60% respectively responding that they encountered

difficulty in this area. The following are comments from the interview regarding the students' skill level:

"Using ELP3 which I feel is important in developing literacy skills, as it encourages receptive skills. I would like to practice this in ELP3 also at preparatory level for BA the level is harder, maybe too big a gap from College. The contents in ELP3 are at much higher level, so I find it difficult to follow"

"Despite this I taught Basic English with my colleague here, at New Delhi on a different ELP to deaf children. I coped at that level of English reasonably well. The ELP3 at preparatory level for BA degree is so different and at a much deeper level".

A comment from another student expresses this view strongly:

"We were shocked with level of reading/work we were given, as never in our lives we have been given/done like that".

Development of essential foundation is vital, as the students' comments reveal, and it is recommended that more preparation in this area is built into the Bachelor Preparation Programme, as it is in other foundation level courses, including the course at UCLan (Quinn & Nunn, 2007).

5.1.5 Students' IT Skills

Experience with technology, i.e. having basic computer skills, is an important criterion. Although from personal communication with the ELP3 course instructor it was made clear that most of the group had some kind of mobile phone, which is one of the basic pieces of ICT equipment that most people personally possess, only two of the 25 participants possessed a laptop. In relation to experience with technology, about four participants had actually used the ELP1 previously at an NGO in New Delhi. The feedback from the group in question 1 of the 'Feelings and evaluation' part of the survey, which asks for a response to the statement 'I feel time pressure when I work on the ELP3 tasks', shows that 56% experienced pressure. This could be attributed to lack

of familiarity with using the online technology through a PC, which would have caused the inexperienced participants to run out of time, although tackling activities in English would also naturally have been challenging. The following comment from the interview raises this issue: "Also fact that many peers do not have basic computer skills such as opening, closing, using internet and its search facility, etc." As over half of the group were lagging behind in terms of spending time online, as seen in Table 4.5 on page 56, this may be also be attributed to being unsure of using the PC and navigating through the platform itself. Simple and usable navigation in e-learning materials is of high importance. The ELP3, which is based on Moodle, enables navigation between individual system levels and activities by hyperlinks in the form of lists of units, pages within units, and tools inside the course. It is advisable to warrant that all students have been introduced to Moodle, its functions and its usage by the ELP3 course instructor at the very beginning (cf. Debevc, Povalej, Verlic and Stjepanovic, 2007).

The above findings comprise the major issues that arose from this study but also demonstrate the success of the validating quantitative data approach taken. The results need to be considered alongside the fact that this innovative project aimed to provide India's very first degree course designed for sign language users to have equal access to higher education through the use of sign language as main language of instruction for the whole course. As in every new programme, teething problems may occur, but the ELP3, despite being a new online platform, demonstrated great potential as a basis to support the learning of English skills by deaf learners.

5.1.6 Limitations of the Research and Lessons Learnt

This study, like any other research project, must accept its own inevitable limitations and proceed with the realisation that it would have benefitted from some pre-analysis and changes. In sum, the following constraints were experienced during the course of this research:

- There are implications for *long distance fieldwork*, i.e. pressures of crucial preparation work before travelling and the unpredictable discovery of further issues on arrival at the site and on meeting the participants. Due to *time pressures*, there may not be sufficient opportunities to hold second interviews or follow-up surveys after the study period. With the advent of online video conferencing, a higher education institution such as UCLan can offer use of its

excellent Adobe Connect software so distance should not be a barrier. However, distance research does naturally pose limitations, and this pressure resulted in a lack of field observation data, which could have shed better light on the actual classroom activities.

- In addition, the move away from the explicit instruction approach that had been used in the teaching of English on the ELP1 (see section 3.1.1) resulted in a *teaching method* that was newly instituted during this research project and had not been tested before. In fact, the limited available models for the Teaching of English to Speakers of Other Languages (TESOL) for deaf people meant that the ELP3 was developed as a tool without specialised expertise in TESOL.

- A further limitation arose due to the *literacy demands* placed on the participants. This issue was identified during the pilot, where it was found that the log-in sheets were too complicated for the students to complete. Adaptations were made by removing the log-in sheets during the fieldwork and so it was possible to overcome this limitation to some extent. Moreover, there was not enough time to provide participants in India with preparation for the reading of the topical item before the site visit, and the group did not enjoy this reading, possibly due to the literacy level it demanded.

- The students also experienced problems with *off-campus access* to the ELP3, a limitation noted in section 4.1.1.1. This problem had been anticipated, as the researcher was conscious that consistent browsing performance could not be guaranteed due to bandwidth differences and traffic patterns across time zones. Although a reason was not identified, the total hours that each participant accessed the platform indicates that there was a limitation experienced in this area too. Patterns of overall usage were identified from the number of hits (see section 4.1.1.2), but the nature of some of the data could not be verified as there was no on-screen tracking facility.

- Finally, the participants in this study represented a heterogeneous group, as summarised in Table 3.2. in Chapter 3. Some of the participants were from outside India and may not have had enough fluency in Indian Sign Language

yet, while at the same time tending to be much stronger in English literacy than many of the Indian participants. All participants also varied in the level of their computer literacy. These circumstances make it more difficult to draw generalisations, and in future studies, a more homogeneous group of participants would be desirable.

With regards to the research questions overall, then, the ability to ascertain the extent to which deaf students can use the ELP3 as an instructional tool was limited. The results indicate that it does have intrinsic potential as a learning support tool but its level of effectiveness is restricted by the demands placed on the student and by the environment around the ELP3 (see section 4.2.1.5). Moreover, as evident from the above points, the results of the study are not easily generalisable to other contexts because the research was carried out with a specific group of participants under specific circumstances, some of which limit the generalisability of results. The next section considers suggestions for future research related to the online learning platform, as well as to aspects of online learning specific to deaf people.

5.2 Implications of the Study and Future Research

It is possible to draw further conclusions related to the use of the ELP3 as a learning tool in relation to learning strategies, independent learning and the learning mentality of the group, as well as the use of blended learning overall, that provide considerations for future use of the ELP3 and other English Learning Platforms for deaf adults.

5.2.1 Deaf People's Learning Strategies

Regarding learning strategies, it has been found in this study that it is crucial to utilise deaf people's own instinctive strategies. Deaf people are often confronted with situations where they cannot access all of the information at hand, which may be incomprehensible to them or it may be that they are not ready on a metacognitive level for new topics/subjects. Therefore, deaf people are forced from childhood to develop strategies to overcome incomplete/defective information, much more than hearing people are required to (Dotter, 2009). They may do this by systematically looking for information from different clues in a text or signed explanation, or by trying out all possible combinations of actions or hints. For many deaf people, gaining information is an important goal and inquiry activities provide high motivation. Hence, deaf people

can reasonably be expected to be more open to and able to use all of these strategies in language learning (Marschark, 2007; Dotter, 2009) and this was noted in this study. These factors open many doors to the active language learning of deaf people when working on texts and communicating through them.

5.2.2 English Learning Platform as an Independent Tool

With regards to the use of the ELP3 as an independent learning tool, this platform appears to have the credentials of an appropriate tool to encourage independent learning, once participants have the basic computer skills and are technologically aware of how to use e-learning platforms. Deaf people living in developing countries should be aware that technological developments over time may enable them to progress to becoming confident independent learners (Sahasrabudhe, 2010). Interview comments from this study indicate that additional options for support within the ELP3 were required in order to facilitate a higher level of independent learning. For example, adding more signed elements to some of the learning components internally and externally would have been beneficial. Signed chats could be added as a first step to discussing a new topic, allowing students to consider the topic before attempting to discuss it in English; this could be seen as a progression into developing a second language with a strong base of understanding of the new topic being discussed through one's preferred language first (Marschark, 2007). Externally, links to the SignOn! and SignOnOne platforms could be added (though the difference between ISL, BSL and the other European sign languages used in the projects would need to be considered in this event).

5.2.3 Deaf People's Learning Mentality

The speed and frequency of use of the ELP3 by some participants over the 10-week study period, i.e. minimum and maximum users, paints a picture of potential types of users and helps with identification of future support needs. It is likely that the participants who are in need of more support will not be in a position to ask the course instructor or developer for it, so the course tutor has to take the responsibility of checking the individual student's progress. Scheduled tasks and scored exercises are a good way of checking every student's progress (Hilzensauer, 2010). Results of actual units covered helps to determine areas of topic content and grammar to be reviewed and improved between classroom teaching and e-learning as part of blended learning. In

order to encourage a higher level of positive learning mentality, this study has shown that each learner's log activity needs to be checked, by setting schedules for each of the units. In this way, the group's progress can be monitored as soon as in-class teaching is completed. Support can also be given to those students who are lagging behind. It is also advisable to stage the uploading of the activities so that students do not feel intimidated by a large amount of tasks; the ELP3 has a privacy facility, where activities can be held back until an appropriate time to enable this (MoodleDoc, 2011). Given an understanding of the group or individual's learning mentality, course developers and instructors may determine how often a revision exercise is required and which unit needs to be frequently revisited; such tracking methods can help adjust the teaching or the contents to enhance the learners' needs (Hilzensauer, 2010).

5.2.4 Role of Blended Learning

In relation to blended learning, the results demonstrate a potential to encourage learners' exploration outside of the classroom via e-learning. The log data results show that half of this group accessed the learning platform over 350 times in the 10-week study period, indicating that the facility of supporting the class teaching activities greatly enhances the learning progress. However, for blended learning to succeed, a well-planned teaching programme must be in place that ensures new topics/learning activities can be easily added and the course instructor is able to identify the appropriate amount of teaching for in-class sessions and for the e-learning element of the course (Nuccetelli and Tagarelli, 2010). Interactive opportunities motivate learning, as this study has shown; the more feedback a student receives, the more they are motivated to learn. The ELP3 and other LMS courses have the in-built facility to provide feedback on students' activities/exercises. The course instructor must take steps to ensure that the feedback process is effective in order that learners can make good use of the facility (Yorke, 2000). There is also a need for students to be able to work at their own pace and time, as part of their motivation to progress.

This study can deduce that the learners from the IGNOU project, and students elsewhere, benefit from flexibility of this kind. With increased computer lab access at IGNOU and access outside of the establishment, e.g. at home with broadband/Wi-Fi access, students have increasing access to technology outside the classroom and this facilitates more opportunity for flexible learning arrangements (Sahasrabudhe, 2010). Interlinking classroom activities with e-learning tasks shows a great future potential for

distance learning packages for deaf people. Early studies have indicated that deaf learners value the distance learning aspect as a facility for improving the communication situation in the classroom (Long, 2009). This study points toward this indeed being the case, as this facility helped to resolve some difficulties for the BPPDS students at IGNOU and for some of the teachers who had not yet developed fluent ISL skills. Blended learning can encourage learners to explore and try out new things without restricting learning to class hours only. Thus the group benefitted by learning from external sites in addition to the course, with 60% of participants expressing this view, and 79% stating that they understood the guided contents too.

However, coupled with the missing opportunity to fully utilise the facilities/features of the ELP3 to support blended learning approaches/techniques, it appears that this is not the way to encourage independent learning in students as yet, as there was negligible 'feedback' in the forums. The implication of this is that efforts needed to be made to encourage more participant interaction between respective peers, as well as the course instructor(s), in conjunction with encouraging participants to adopt a deep approach to their learning, such as in the forums. It is suggested that this may be achieved through individual and group tutorials and lecture-linked laboratory sessions and through continuous feedback assessment methods.

5.2.5 Further Issues

Online courses support learners to develop their own language skills independently and provide access to free online materials, such as grammar practice websites. Participants who need time to think about their opinion can work outside of the class and then share this with their peers. This study had limited data with which to examine the enrolled participants' tendencies however, and it is suggested that future studies should cover more statistical data, some of which will be generated through action research with intermediate level learners of English. Finally, it is relevant to note that the VLE initiative is currently being developed for use as an educational tool, as well as a support for individual and group participant(s) learning. At present, links between participant approaches and individual patterns of access to Moodle are only being initially investigated and should be further investigated in the future. It is only left to state that, as in the many studies over the last 200 years of the mystery of deaf education, which continues to baffle even the greatest researchers, still even today one must truly meet the needs of all deaf users, and in order to achieve this it is necessary to understand the views of the users and how they work with the material.

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APPENDICES

APPENDIX 1 – The ELP3 Questionnaire

ELP3 Questionnaire

Student:_____   Date:_____   Time:_____

Student's Experience on ELP3: 'Liking'

Scale	1 ☞	2 ☹	3 ☺	4 ☺	5 ☝

1. I like watching signed explanations

| 1 | 2 | 3 | 4 | 5 |

2. I like reading the English text

| 1 | 2 | 3 | 4 | 5 |

3. I like doing the quiz exercises

| 1 | 2 | 3 | 4 | 5 |

4. I like browsing the links to external sites

| 1 | 2 | 3 | 4 | 5 |

5. I like doing writing exercises in the forum

| 1 | 2 | 3 | 4 | 5 |

6. I like chatting in the Chat section

| 1 | 2 | 3 | 4 | 5 |

Student's Experience on ELP3:"Understanding'

Scale	1 ☞	2 ☹	3 ☺	4 ☺	5 ☝

1. I can follow signed explanations clearly

| 1 | 2 | 3 | 4 | 5 |

2. I can understand the English text most of the time

| 1 | 2 | 3 | 4 | 5 |

3. I can complete the quiz exercises every time

| 1 | 2 | 3 | 4 | 5 |

4. I learn from the links to external sites most of time

| 1 | 2 | 3 | 4 | 5 |

5. I can complete the writing exercise in the forum most of the time

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	1	2	3	4	5

6. I can make chat in the Chat section without difficulty

	1	2	3	4	5

7. I can do tasks that my teacher asked me to do in the Lab

	1	2	3	4	5

8. I need to work with someone in my group in the Lab

	1	2	3	4	5

Student's Experience on ELP3: "Communication and classroom settings"

Scale	1 Never	2 Once in a while	3 Sometimes	4 Always
	1	2	3	4

1. I could manage on my own doing the ELP3

	1	2	3	4

2. I help my classmate in doing the ELP3 tasks

	1	2	3	4

3. My classmate helps me in doing the ELP3 tasks

	1	2	3	4

4. My teacher helps me complete the ELP3 tasks

	1	2	3	4

5. My classmate took over doing the ELP3 tasks for me

	1	2	3	4

6. I took over doing ELP3 tasks for my classmate

	1	2	3	4

Student's Experience on ELP3: "Feelings & evaluation"

Scale	1 Never	2 Once in a while	3 Sometimes	4 Always
	1	2	3	4

1. It feels hard to complete ELP3 tasks on time

	1	2	3	4

2. I find ELP3 activities very interesting

	1	2	3	4

3. I find ELP3 activities and tasks boring

	1	2	3	4

4. I find doing ELP3 activities and tasks relaxing

	1	2	3	4

5. I get tense when I do the ELP3 activities and tasks

	1	2	3	4

6. I would like to do the ELP3 activities and tasks outside of the Lab

	1	2	3	4

Open Questions:

1. Give me an example of your best experience on the ELP3

2. Give me a specific example of worst experience

3. For what other situations/groups would you recommend using the ELP3?

ACD/ELP3 Questionnaire/14-12-09

APPENDIX 2 – Consent Form

INTERNATIONAL INSTITUTE FOR SIGNED LANGUAGES AND DEAF STUDIES,

UNIVERSITY OF CENTRAL LANCASHIRE

Preston PR1 2HE, UK

Consent form

(Please tick "❑" where applicable to show your consent)

❑ I agree to having my sign language data stored and analysed at the University of Central Lancashire for the purpose of research by the International Institute for Sign Languages and Deaf Studies.

In addition:

❑ I do <u>not</u> consent to the publication of video data or photos because I want to remain <u>completely anonymous</u>. (that is, only transcribed texts and line drawings can be published)

<u>Or:</u>

I <u>agree</u> to the publication of the following:

❑ 1. Photos in publications (print, CD-Rom etc.) and/or

❑ 2. Video segments for conferences (presentations) and/or

❑ 3. Video segments in publications (CD-Rom etc.) and/or

❑ 4. Photos and Videos in the internet.

_____
First name and last name

_____
Place   Date   Signature

_____
In case of parents signing for a child, the child's first and last name

08:04: P10 *has just entered this chat*

08:04 P10: u topic water

08:06 P10: please reply me

08:07 P10: it important water of life.

08:08: P13 *has just entered this chat*

08:08: P25 *has just entered this chat*

08:08: P1 *has just entered this chat*

08:09: P18 *has just entered this chat*

08:09 P18: hi good afternoon

08:09 P18: what did u do topic today?

08:09 P10: did mean

08:09 P13: Hello P25

08:09 P13: How are you doing?

08:10 P1: topic cell a busy factory

08:10 P25: Hello, P13. How is your study going on?

08:10 P18: hello P13

08:10 P1: Hello P13

08:10 P18: how is all students going on??

08:10 P18: my study is going very well

08:10 P13: Ya

08:10 P13: my study is going well

08:11 P1: my study is going on BPPDs

08:11 P13: and what about you?

08:11 P18: smae here

08:11 P13: are you enjoying in the study?

08:11 P10: hello P13

08:11 P1: BPPDS that this course

08:11 P1: YO

08:12 P10: hello P25

08:12 P18: P1, what did u do aim in topic?

08:12 P18: hello P10

08:12 P25: P13. yes,i am enjoying in d study. Also you?

08:12 P10: u like topic

08:13 P25: what do you like to goal ba?

08:13 P10: filmmaker or model or teacher

08:14 P13: Hi P25

08:14 P13: it sounds good to hear that you are enjoying in study

08:14 P25: Heiio, P10. How is your study going on???

08:14 P10: hello P1

08:14 P13: But let me know you have submitt your assigment in IPL?

08:14 P10: i am feel better study

08:15 P25: submitt meaning that you give to example me that.

08:16 P10:P1 please reply me

08:17 P25: Hello, P1. what are you interenting ba??

08:17: P21 *just entered this chat*

08:18 P13: submitt means to send or give back

08:18 P10: hello P21

08:19 P21: hello P18, hoiw are you today?

08:19 P13: is it ok for you?

08:19 P10: i am learn for sibaji lecturer

08:20 P21: yes it is ok, and you?

08:20: P21 *has left this chat*

08:20 P13: Hello Africian Lion

08:20 P10: what do u ?

08:20 P25: yes,i ve subitt my assigment in ipl. also you?Yes, it's ok for me.

08:20 P13: Do you know how to hunt a dear?

08:20 P13: Ya, I did it

08:21 P25: I don't know that.

08:21 P10: are u happy for u

08:22 P13: what you don't know?

08:22 P25: Do you know how to ppt?

08:22 P13: PPT? easy

08:22 P18: YES PPT EASY

08:22 P10: i am better ppt

08:22 P25: Please you teach me ppt'full.

08:22 P18: HOW U KNOW LEARN IN PPT?? LAST TIME

08:23 P18: yeah m sure i can teach wid u

08:23 P10: my friend teaches me

08:23 P18: wid mean with

08:23 P10: wow i will be call u

08:23 P18: what di u call me?

08:23 P18: mean?

08:23 P25: Ok fine. How did you know how to ppt???

08:24: P5 *has just entered this chat*

08:24 P18: i experinced in ppt last sat, sun

08:24 P25: Oh good.

08:24 P18: thanks

08:25 P25: what bols?

08:25 P18: bols mean else?

08:25: P5 *has left this chat*

08:25 P18: bols wirte hindi language

08:25: P1 *has left this chat*

08:25 P18: else mean english language

08:25 P18: u und?

08:25 P25: yes.

08:26: P5 *has just entered this chat*

08:27 P18: do u have interseting to study in topic???

08:28 P10: ok u are enjoy it

08:28 P18: so u dnt research in study but only research in enjoy

08:28 P18: ????

08:29 P10: ok welcome

08:29 P18: so u short write only

08:29 P10: yes

08:30 P18: what happend?

08:30 P10: u see mosquito

08:30 P18: what??

08:31 P10: computer

08:31: P5 *has left this chat*

08:32 P18: what dod i see mosquite?

08:32 P10: how feel ur mosquito bite?

08:35 P18: i did not like mosquite bite

08:36 P18: its hate

08:36 P10: u do not understand

08:36 P18: yes, i didnt und

08:36 P18: say

08:36 P10: ok leave

08:37 P10: no problem

08:37 P18: okk

08:38 P18: u highest teach wid dharmesh sir by yourself qouestion of idea?

08:39 P10: thank u

08:41: P10 *has left this chat*

08:41 P18: good bye

08:41: P18 *has left this chat*

08:43: P25 *has left this chat*

APPENDIX 4 – Related projects in Europe

The five projects described in this appendix also aimed to teach English to deaf people using an e-Learning format with a sign language as the language of instruction.

1) **The SignOn! Project** - English for Deaf Sign Language Users on the Internet: The 'SignOn!' project[10] was coordinated by a team in Austria in partnership with Finland, Iceland, the Netherlands, Norway, Spain and the UK, from 2004 to 2007. This project, a Socrates project funded by the EU, was aimed at intermediate English level and allowed sign language users to access the course directly (the written language of their country is often a first foreign language). The target group for projects such as this is deaf adults who can follow the course in the classroom but are also competent to explore English independently, and who perhaps want to travel or research information on the Internet. However for many non-bilingually-educated deaf people, intermediate English has been found to be beyond their skill level, hence the need for the introduction of beginner-level English courses, some of which are described next.

2) **The SignOnOne Project:** The Basic Skills in English for Deaf Adults project, referred to as 'SignOnOne',[11] was a two-year Grundtvig, life-long learning project. The SignOnOne project was a follow-up to the SignOn! project mentioned above, this time with the Austrian team working in partnership with teams from the Czech Republic, Hungary, Iceland, Norway and Spain. The project dedicated a similar provision but at a basic level, as many deaf adults found the intermediate level in the SignOn! project beyond their abilities. SignOnOne ran from November 2008 until October 2010 and focused on the provision of online training in basic written English for deaf people across Europe. Ten lessons were developed as part of the course in close co-operation with the deaf team members of each partner institution, guaranteeing a deaf perspective throughout the course. The core of each lesson contained a piece of written English text with translations of single sentences, words

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[10] www.acm5.com/signon2/index.html. No academic research was published as a result of these projects, which is why only the websites with the actual developed tools are referred to here. as accessed on 28th September, 2011

[11] www.sign-on.eu as accessed on 28th September, 2011

and phrases into the national sign languages of the six partner countries. These were complemented by animations, presenting the cognitive concepts contained within every sentence, and signed grammar explanations. A basic level of English competence for deaf adults is indispensible nowadays and while there are many generic, mainstream courses, there are very few aimed at deaf people who use a national sign language as their first or preferred language. The aforementioned projects' websites are freely accessible via its Internet homepage, without the requirement of any log-in or download (see footnotes).

3) **The BASE Project (short for Basic Skills in English for Deaf Adults):** BASE[12] is a project that was co-funded by the European Commission through the Education, Audiovisual and Culture Executive Agency (EACEA) under the 2008 Call of the Life Long Learning Programme (Grundtvig). The aim of the BASE project was to give every European deaf person a chance to acquire, develop and brush up their basic reading and writing skills in English. English is the main language of the Internet (97%) and of most international information, and BASE believed that every person should have access to it. The project started in November 2008 and ended in October 2010. In the first year, the website and e-learning course was created. Next, English tutors from each partner country (Spain, UK and the Netherlands) were trained. In the second year of the project, the tutors began teaching English classes to deaf adults by using the e-learning platform, and using Sign Bilingualism as the communication method throughout the course. There were two ways for the students to enter the BASE course in Basic English: 1) combined classroom teaching and e-learning, or 2) e-learning only. The e-learning platform was the core of the whole course: there were 10 units, where the students could find grammar explanations in their national sign language along with suitable activities and exercises. BASE proceeded in the hope that other deaf organisations in Europe would find the course useful, and translate the material and videos to suit their own countries. As of October 2011, BASE however is still not available on the Internet; they are currently looking for funding to install it on a better platform and presently students have to register to use the host web domain.

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[12] http://www.base.gva.es/ as accessed on 28th September, 2011

4) **The DEAL TOI project**[13] - Deaf people in Europe Acquiring Languages through ELearning: Transfer of Innovation: This project ran from 2006-2008 and was hosted by The National Institute for the Deaf in Rome, with partners in the UK (Deafness Cognition And Language Centre, London), Spain (University of Barcelona and the Catalan Sign Language Institute, Illescat), Italy (Italian National Research Council, the Italian National Organization for the Deaf, the Magarotto Institute for Specialized Teaching for the Deaf, and Lynx, an e-learning company). There were two main aims steering the project: firstly, to create a course in written English for business, based on a previously tested model, using sign language as a method of instruction; and, secondly, to ensure that e-learning is used in the education of deaf people in the project partner countries in the future. This e-learning project is of interest to this research, as it recognised the difficulties that deaf people face in finding suitable language learning courses that provide relevant teaching methods and approaches. The importance of sign language as a teaching and learning tool was central to this study and the natural learning strategies by which deaf people function were given prime importance. The project also recognised the importance of English literacy competence for deaf adults, and the benefits that e-learning can bring to this process were highlighted as part of the project's success.

5) **The Dedalos Project:** A further e-learning based project[14] that is of interest to this research is the European Union's Leonardo project, Dedalos. The project, titled 'Teaching English as a second language to deaf people, whose first language is Sign Language, via e-Learning tools', ran in Greece from 2002-2004 and was funded by the EU's National Centre for Scientific Research, Demokritos. Among other aims, the central focus of the project was the design and implementation of an online distance learning application, providing teaching of written English, and was specifically aimed at deaf sign language users. The e-Learning environment was made accessible via sign language and all multi-media materials were translated into sign language via Streaming Digital Video. As importantly, the project included the setting up of a forum of specialists who were on hand to provide advice and guidance

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[13] http://toi.deal-leonardo.eu/ as accessed on 28th September, 2011

[14] http://imm.demokritos.gr/dedalos/ as accessed on 28th September, 2011

to deaf learners. This created an effective online information exchange, where deaf learners could present issues and consider options for resolution, and this also provided a concurrent avenue for feedback between the students and the professionals on an applied level. This innovative project taught linguistic aspects of the English language using a combination of synchronous learning and self-paced, asynchronous methods. This enabled Greek deaf people, who were noted as being educationally and economically under-resourced, an opportunity to learn written English in a dedicated, accessible and empowered environment.

The uniqueness of the above projects is that they taught beginner level English with a sign language as the language of instruction. It is clear from examining the various related projects, then, that interest and efforts to raise awareness of the need for the development of e-Learning programmes using English for deaf sign language users has been one of the forefront aims of many deaf organisations and educational establishments in the UK and Europe in the last 10 years, including UCLan's Deaf Studies department, who have been one of the project partners in both projects 1 and 3 above. Further details of current 'Teaching English to Deaf Adults' projects can be found here[15]. Whilst such projects must be highly commended, the biggest drawback related to such activities is the absence of proper research evidence of deaf learners' progress and of the effectiveness of the projects.

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[15] http://www.opensign.org/index.php?option=com_zoo&view=category&Itemid=12 as accessed on 28th September, 2011

APPENDIX 5 – UKIERI Research Team

The current research team comprises of:

1. Sunil Sahasrabudhe of Mumbai, India. His research topic is: An online elementary-level English literacy programme for young deaf adults using Indian Sign Language.

2. Dharmesh Kumar of New Delhi, India. His research topic is: Teaching English Literacy through an online English Learning Platform (ELP) for Deaf Peer Educators.

3. Tamara Kovacova of Prague, the Czech Republic. Her research topic is: Combining peer-to-peer education strategies and distance learning of English for Deaf students in Ghana and India.

4. Clark Denmark of the United Kingdom. This MA by research thesis topic is: An Online Learning Platform for English as a second language for young deaf Indian Sign Language Users: Usage patterns and user engagement.

5. Sibaji Panda, MA., researcher responsible for project management, coordination, and fieldwork.

6. Prof. Ulrike Zeshan, professor in sign language linguistics, Principal Investigator.

7. Prof. P.R. Ramanujam, professor in distance education, Indira Gandhi National Open University Co-Investigator.

8. Philip Howarth, technician, responsible for ELP imementation.