

**Parent-Involved E-learning Solution for Weekend
Face-to-Face EFL (English as a Foreign Language) Course
for Preschoolers: a Case Study of Linguaphone China**

A dissertation submitted in partial fulfilment of the requirements for the degree of

Master of Learning Science and Technology

by

Wenchao He

**Centre for Research on Computer-Supported Learning and Cognition
Faculty of Education and Social Work
The University of Sydney, Australia**

July 2008

Author's Declaration

This is to certify that:

- this dissertation comprises only my original work towards the Master of Learning Science and Technology Degree;
- due acknowledgement has been made in the text to all other material used;
- the dissertation does not exceed the word length for this course;
- no part of this work has been used for the award of another course or degree;
- this dissertation meets the University of Sydney's Human Research Ethics Committee (HREC) requirements for the conduct of research.

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Name: Wenchao He

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Name: Wenchao He

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Abstract

This case study was driven by the needs of Guangzhou Kids Centre, Linguaphone Group China Branch to explore the feasibility of developing an e-learning solution to promote parental involvement in order to enhance the learning outcomes of the preschooler-level students attending weekend face-to-face English classes. A pilot e-learning project was initiated in two classes (Level 1 and 2) to help the parents to organise weekly family-based English learning activities under the instruction of the teachers. During a five-week period, the parents were given access to an online learning management system where there were weekly instruction packages including the teachers' summaries of what was taught in class, family-based English learning activity guide with relevant materials, and a feedback forum. The teachers checked and replied the parents' feedback during the week to provide further assistance. To have a better understanding of parental involvement in the weekend English class and to avoid influences of any potential technical issues related to the e-learning project, an alternative method was taken at the same time in another two classes (Level 1 and 2), where the parents received the same instruction packages in print. The parents completed some questionnaires before and after the project, and were interviewed by the researcher. The four teachers were also interviewed at the end of the project. The results show that most of the parents of Level 2 students actively participated in the project while the participation by the parents of Level 1 students was limited. The E-Learning Group's and Print Group's parents participated in the program using different strategies. The teachers' and parents' observations seem to suggest that the students' progress was associated with the degree of activeness of the parents' participation. Suggestions for the subsequent development of the e-learning solution are made based on the analysis and discussion of the results.

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1 Introduction

It has been reported that the market of English language education for children in China is continually growing because more and more Chinese parents are pushing their children to weekend or vacation English classes to receive additional training so that the children would have a brighter future (Li, 2008; Xie, 2008). As this market is becoming more and more competitive (ibid), the providers of this kind of education need to improve their services and promote their excellence by continual innovation. The present study is driven by such needs from Linguaphone Group China Branch.

1.1 Problem Statement

Many commercial weekend classes for preschoolers, which are out of the framework of kindergartens, have difficulty in continually supporting students' learning during the week. The content taught in those commercial weekend classes are usually more different from that in students' kindergartens, so the students do not have enough opportunities to review and practise what was learned in the weekend classes when they are in kindergartens. Furthermore, without the weekend teachers' instruction, parents may not have much idea, confidence and appropriate approaches to help and promote their children's learning at home. On the other hand, different from kindergarten teachers who can observe the students day after day, weekend teachers do not have many opportunities to evaluate every student's learning process, so their weekly instructional design may be weak on the aspect of learner analysis as most of the information from the students is from the class last week.

Such real world problem has emerged in Guangzhou Kids Centre of Linguaphone Group China Branch. Linguaphone Group is an international EFL (English as a Foreign Language) education provider. Most of their courses in Guangzhou Kids Centre are weekend-based, so the problem rooted in the gap between

every two weekends is obvious. The researcher was therefore to conduct a case study with Linguaphone China and tried to develop a solution, which was expected to: (1) enhance the communication between the weekend teachers and the parents, (2) involve the parents into their children's English learning, (3) facilitate and direct the parental involvement, (4) provide the students with opportunities to review and practise what they learned in class under the help of their parents during the week, and (5) gather useful information for the learner analysis process as part of the teachers' weekly instructional design.

1.2 Possible solution

A possible solution is to incorporate information and communication technologies (ICT) to the whole instructional process in order to meet the expectations mentioned above. But the problem is not likely to be solved by technology itself. Instead, it also needs to apply appropriate correlative pedagogical approaches. If computer-based technologies are used as quick add-ons to the existing course, but not based on the learning sciences, there would be very little impact on enhancing learning (Cuban, 2001; Sawyer, 2006). So we should not just move the course content to the Internet and wait for students' progress, but possibly develop an e-learning solution with clear guidelines and facilities for the parents to promote their children's learning, and for teachers to design and conduct home-based learning activities, but not for students to "do homework" directly without their parents accompanied and assisted.

1.3 Purposes of the Study and Research Questions

As the researcher was invited by Manager of Guangzhou Kids Centre of Linguaphone to participate in the development of their learning management system, the direct purpose of the study was to provide the stakeholders with important and useful information about the parental involvement program that is conducive to their decision making process. Besides this, the other purposes of the study include: (1) to investigate

the habits, perceptions and preferences of the Linguaphone preschooler students' parents and teachers toward the parental involvement activities, (2) to develop an instructional strategy involving students' parents in the process of language teaching and learning, and a design of computer assisted language learning (CALL) environment, and (3) to bring new findings from the real world to the theories of learning sciences.

To achieve these purposes, the researcher proposed and initiated a parental involvement project in Linguaphone and investigated the following research questions:

- How were the parents involved in their children's English learning?
- How did the e-learning solution support the parental involvement?
- How could the students' English learning be enhanced as a result of the parental involvement?

2 Literature Review

This chapter presents an investigation into the literature on the connections among parental involvement, e-learning and second/foreign language acquisition. The present study is conceptually located in the overlap of these three fields. Section 2.1 outlines the background of the research on parental involvement which has not yet paid much attention to ICT assisted approaches. Section 2.2 starts with a very board discussion about the different representations of e-learning and then gradually focuses more on the perspectives in terms of family and family-school connection. Section 2.3 reviews relevant second/foreign language acquisition principles within the family context, and then addresses the trend of the development of computer assisted language learning (CALL).

2.1 Parental Involvement

2.1.1 Parental Involvement's Effectiveness

In the last three decades, scholars from different disciplines have been applying various methodologies to study connections of schools and families of various backgrounds and cultures, and the impacts on students at different ages and grade levels (from preschoolers to high school students), and have documented the positive relationships between parental involvement and children's learning outcomes. They emphasize the importance of parental involvement because they have found that both home-based parental involvement (e.g., parental tutoring, managing trips to libraries, providing learning materials, setting aside space for family learning activities, etc.) and school-based parental involvement (e.g., contacting with the child's teacher, attending school workshops, participating in school decision making process, etc.) were related significantly to students' school readiness, learning motivation, academic performance,

and social competence (Connors & Epstein, 1995; Epstein, 1995; Funkhouser & Gonzales, 1997; Henderson & Berla, 1995; Heyns, 1978; Parker et al., 1997; Reynolds, 1994; Stevenson & Baker, 1987).

2.1.2 Parent-school Partnership

Since the study and application in this filed commenced, the role of parents in parental involvement processes has changed from standing alone to being considered in school policy making. Such parental involvement is based on the partnership of school and family that shares responsibilities for children and influence them simultaneously. Here the concept of “shared responsibilities” removes part the burden from parents to figure out on their own how to become or stay involved in their children’s education from year to year and put part of that burden on schools to create programs to inform and involve all families (Epstein, 1987, 1992). Thus, although the eventual implementers of parental involvement are parents, schools still need to design a practicable solution to provide them with guidance and relevant materials so that the effect of their involvement can be maximised. Epstein (1996) believes that the goal of such solution should be “to develop and conduct better communications with families across the grade in order to assist student to succeed in school” (p. 213) as she has noticed that the main research questions in parental involvement have been moved from “Are families important for student success in school?” to “If families are important for children’s development and school success, how can schools help all the families conduct the activities that will benefit their children?” and “How can schools communicate with families to enable more families to guide their children on positive paths from birth through high school?”.

To promote further research on the new questions and provide schools with choices about which practices will help achieve important goals, Epstein (1992, 1995, 1996) classified parental involvement activities into six discrete categories of influence, from proximal home influences to the more distal community influences (see Table 1).

Type	Activities
Parenting	Help all families establish home environments to support children as students.
Communicating	Design effective forms of school-to-home and home-to-school communications about school programs and children's process.
Volunteering	Recruit and organize parent help and support students and school programs.
Learning at Home	Provide information and ideas to families about how to help students at home with homework and other curriculum-related activities, decisions, and planning.
Decision Making	Include parents in school decisions, developing parent leaders and representatives.
Collaborating with Community	Identify and integrate resources and services from the community to strengthen school programs, family practices, and student learning and development.

Table 1: Epstein's Classification of Six Types of Parental Involvement

However, this framework may suit most of school contexts, but not all the components can be applied by commercial weekend educational organisations. This is because there are different contexts in such educational organisations and most of the regular schools. For example, the students go to weekend classes for only several hours every week so it may be difficult for such educational organisations to organise "large activities" such as parent workshops, collaborating with community and establishing parent committee, which may lead to ineffective investment, while regular schools (and kindergartens) are more responsible for those activities as their educational aims are not limited in a small domain but also to develop students' knowledge and skills comprehensively.

2.1.3 Communicative Issue of Parental Involvement Programs in Kindergartens

Regular kindergarten teachers' reports have indicated that, in parental involvement process, some parents may be less effective at communicating with the teachers or even choose not to exchange information and not to pursue the partnerships because they fear the judgment of each other and actively seek to limit contact (Baker, Kessler-Sldar, Piotrowski, & Parker, 1999). On the other hand, some parents complained that they only received the general information about class events from teachers, but have little opportunities to communicate with teachers more interactively, such as writing notes to

teachers and getting specific feedback about their individual child (Baker, 1997). There have been challenges about communication for promoting parental involvement in regular kindergartens where the children are required to attend several days per week (in China, usually five days per week). This kind of challenges would be more serious for commercial weekend classes as the parents have much less opportunities to physically present in the classrooms and communicate with the teachers face-to-face.

2.1.4 Parental Involvement Possibility

Hoover-Dempsey & Sandler (1995, 1997, 2005) summarized the variables that influence parents' decision to be involved in their children's education, and illustrated them in a five-level model (see Figure 1).

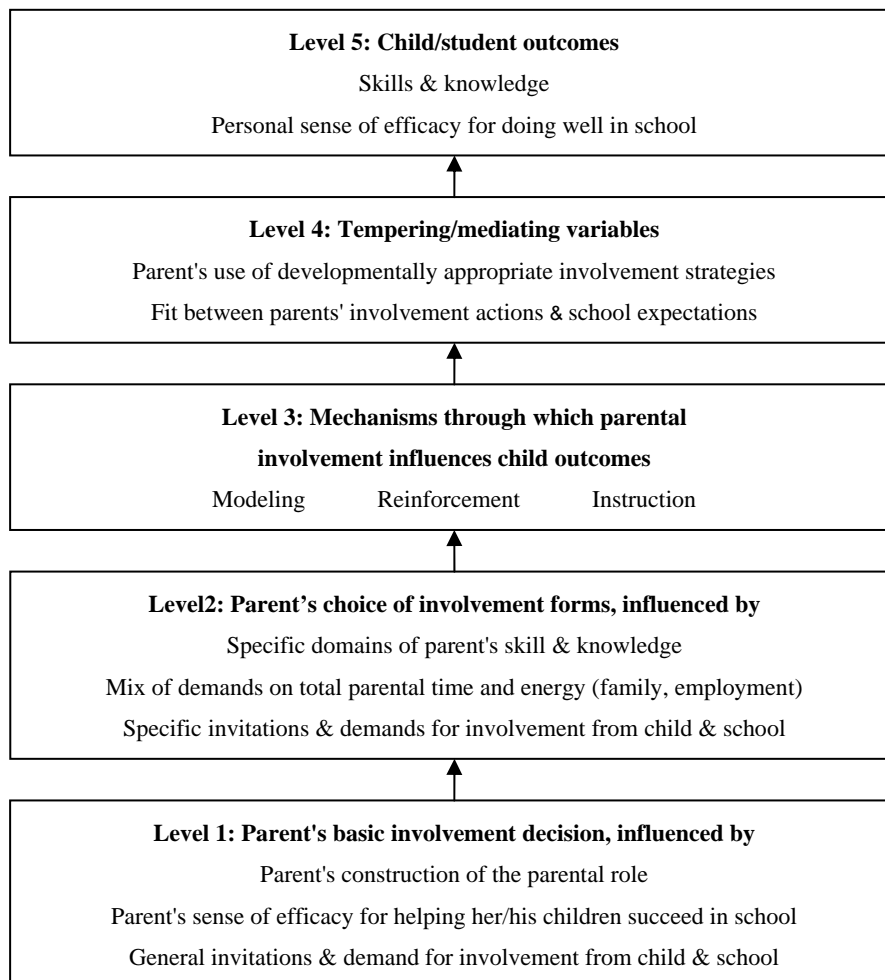


Figure 1: Hoover-Dempsey & Sandler's Model of Parental Involvement

While Epstein's (1992, 1995, 1996) classification framework provides schools with choices of parental involvement activities and it assumes that parents may participate in, Hoover-Dempsey & Sandler's (1995, 1997, 2005) model assumes that parents originally may not decide to participate but it is specific variables that lead to parents' decision. So it would be better to adopt and apply both theories when schools are developing a parental involvement solution. For the one hand, schools need to propose their chosen types of activities that can be supported by the resources they have controlled and are relevant to their educational goals. For the other, schools also need to give effort to promote parents' decision to be involved in the activities designed by the schools. Such efforts can be based on the identification of the status of the parental involvement variables. In other words, "while elementary and secondary schools cannot realistically hope to alter a student's family status, schools may hope to influence selected parental process variables in the direction of increased parental involvement" (Hoover-Dempsey & Sandler, 1997, p. 8). And such influence is supposed to be carried out through specific activities. For examples, if parents think they lack the skills and knowledge to participate in their children's learning, schools may provide the parents with tools to facilitate the involvement process or help the parents learn relevant skills and knowledge. However, Hoover-Dempsey & Sandler (1997) was still not clear about how schools can successfully offer parents direct and vicarious efficacy-enhancing experiences that would complement the more generally used approach of persuasion (e.g., "Please come", "It's important to help your child").

2.2 E-learning

2.2.1 E-learning's Representations

"E-learning" is a very broad term representing various approaches of learning using information and communication technologies. So researchers have narrowed it and created more new terms representing similar but different patterns of e-learning, such as web-based learning, distance learning, blended learning, networked learning, and the

like (Bonk & Graham, 2006; Bullen & Janes, 2007; Goodyear, Banks, Hodgson, & McConnell, 2004; Horton, 2000; Khan, 2005; Moore & Anderson, 2003). However, none of these specific terms is totally appropriate to represent the e-learning need of weekend face-to-face classes for preschoolers. Traditional classrooms are still the base where the preschoolers' main learning activities take place, so web-based learning and distance learning do not suit such context as they are expected to not offer any opportunity for face-to-face communication among tutor and learners during the whole course (Horton, 2000; Moore & Anderson, 2003). Though blended learning is to "combine face-to-face instruction with computer-mediated instruction" (Graham, 2006, p. 5), its computer-mediated part is expected to be a component of the course content, which implies that the learners may learn new content and participate in instructional activities online. This implication also applies to open learning and distributed learning that emphasize learners' self-control according to everyone's own time, pace and place (Calder & McCollum, 1998; Khan, 2005; Saltzbert & Polyson, 1995). However, due to preschoolers' generally low computer literacy (Poynton, 2005), it is not appropriate to provide the young learners with direct instruction online.

2.2.2 Networked Learning

The closest term that would represent the e-learning need of weekend face-to-face classes for preschoolers would be networked learning, as it uses ICT "to promote connections: between one learner and other learners; between learners and tutors; between a learning community and its learning resources" (Goodyear et al., 2004, p. 1) (see Figure 2) and it may also include ICT or non-ICT supported face to face interactions because it is not necessarily distance learning (Goodyear, 2005).

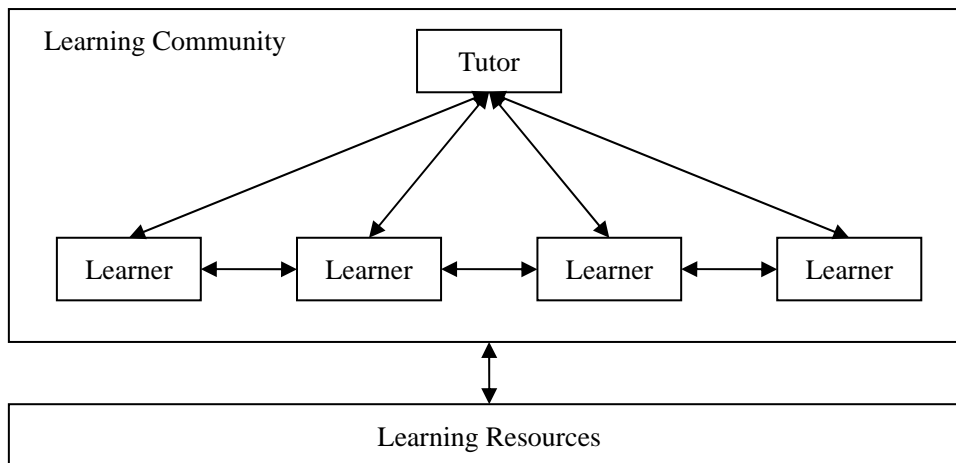


Figure 2: Goodyear's Networked Learning Model

However, if we apply this model in the context of early childhood education where parents are involved, the model does not provide sufficient information about how we can define, design and explain the internal structure of the connections in terms of the young learners' parents. Besides this, as the pedagogies of networked learning emphasise the potential benefits of learning through co-operation, collaboration, dialog, and participation in a community (Goodyear, 2005; Goodyear et al., 2004), it is still not clear that how this could happen between the preschoolers, and between the preschoolers and the teachers. In order to explore these issues, we need to further investigate the connection patterns rooted in the network.

2.2.3 E-learning in a Family Context

There are some studies on e-learning in a family context with various objectives and approaches, but their focuses were on specific family members—either parents or children. For example, Kramarae (2003) studied how to use e-learning to help parents (especially mothers) with children and without much “free” time away to complete courses and degrees after having interrupted their formal education because of family reasons, but their children are not involved in the learning.

As in the 1980s, Hess & McGarvey (1987) found that preschoolers as young as 3 years can interact meaningfully with simple computer programs, Cook & Finlayson (1999) continued to study how young children learn to master and use computers and

Internet under the help of parents and teachers and Bennett (1998) provided parents with comprehensive guide about how to use computers, software and internet with their children. In these studies, the parents were involved in their children's learning ICT but what their learning based were not a specific product designed for those specific young learners. These studies are more about parents' helping young children with "learning-e", rather than "e-learning", because "e" was what the young children learned but not the approach they learned other subject matters.

In terms of other subject matters and actual e-learning programs, Franka, Reichb, & Humphreys's (2003) research came out that, although parental assistance for children's computer and Internet usage are given, children aged 11–12 find it difficult to learn in a distance learning computerized environment where there is no face-to-face contact with the teacher or with other students. This might be because the children were asked to use the computers by themselves but they lacked the computer skills needed for distance education.

To assist children comprehensively, Dave's (2007) Interactive Distance e-Learning (IDel) Project provided the parents with special training on basic technology and computer skills so that they were equipped to help their children with the computer and they also felt much confident when they were involved in the children's learning.

Such trained skillful parents can help their children properly and effectively, as the children benefit from the parents' scaffolding. Naidu (2003) used parents' providing children with "scaffolds" (e.g., advisement, support, etc.) in daily life as an "example" to explain how important e-learning programs provide learners with "cognitive support tools". However, without the attention to the studies on family-based e-learning mentioned above, Naidu (2003) has not thought of directly helping parents become the "cognitive support tools" for their young children's e-learning.

From the above discussion, it is clear that the family contexts in those previous studies have not promoted children's e-learning directly in terms of the subject matters except computer skills. According to Epstein's classification (see Table 1), helping children with computers is one type of parental involvement—Parenting—that may lead to the children's better learning outcomes. However, "Learning at Home", another type of Epstein's classification which requires parents to help students at home with

homework and other curriculum-related activities, decisions and planning, has not been explored much in the context of parent-involved e-learning.

2.2.4 Using Technology to Promote Family-School Connection

E-learning in a family context may focus on the learning itself and also consider the roles of other family members. Some researchers studied on the similar topics but from a different angle—more focused on the technology-based family-school connection's realization and effectiveness rather than the learning itself. Blanchard (1997) identified four ways that technology can serve the family–school connection: (1) communication and information, (2) learning and instruction, (3) interest and motivation, as well as (4) resources and costs. He emphasised the importance of technology because he believes that “finding ways to connect and link all stakeholders in the family–school connection presents a set of stubborn and bedraggling problems that, so far, we have not been able to solve without technology” (p.243).

Limitations of time, schedules, distance, and resources prevent school-home communication from being either universal or comprehensive (Bauch, 1997). However, as families' access to advanced computer and telecommunications technologies has increased, new opportunities to forge family-school connections supported by new and advanced technologies have become possible (Penuel et al., 2002). The technologies and services that support such opportunities include: (1) Voice Mail, a telephone recording system for teachers to leave specific messages for parents as a group or individually, (2) Bulletin Board, a service for parents to call in via telephone or computer modem connections and access information on a specific topic, (3) Help Line, a telephone hotline for students or parents, (4) Interactive Television, a two-way video/audio that allows access of information on demand, (5) Instruction Video, which is designed to teach specific learning objectives, (6) Laptop Program, providing students with laptops to take away home, (7) E-mail, enabling parents and teachers to send and receive messages via computer connection over the Internet, (8) World Wide Web, which is the Network of computers around the world that can be accessed through the Internet to provide information on many subjects, (9) School Software for home use,

(10) Video Classroom Observation, which makes students' learning experience visible to the anxious parents from any computer with Internet capability, and the like (Bauch, 1997; Charp, 1997; Marshall & Rossett, 1997; Penuel et al., 2002).

Although various technologies have been used for promoting family-school connection, technology itself can not guarantee success. Even though technologies have helped create an environment where parents can quickly access to the resources linked to their children's teachers, for some reasons, the parents still may not use it. For example, Myers (1996) examined the impacts of a laptop program on parent-school communication but did not find the positive results while some other laptop programs took effect (Gunner, 2007; Livingston, 2006). Therefore, using appropriate technology forms in appropriate ways is crucial for achieving the goal of promoting family-school connection. However, there are not many guidelines in literature for using specific technology-based strategies to promote family-school connection in the corresponding contexts. Furthermore, many relevant studies focused more on what and how technologies can promote the connection and the effectiveness of the practices, than on why specific technologies should be used in specific ways.

2.3 *Second/Foreign Language Learning*

2.3.1 Family-based Linguistic Input and Interaction

There has been a long history of researching on the nature of linguistic input to and interaction with language-learning children as well as the nature of adult speech to language-learning children (Snow, 1994). Child language researchers have emphasised the importance of studying the communicative intent of the speech of both parents and their children, because “[children are] surrounded by language, but not the form of grammars and dictionaries, or of randomly chosen words and sentences...what [they] encounter is ‘text’, or language in use” (Halliday, 1975, p. 20). This implies that communication should be central in the study of children's language acquisition and the research context should be in their natural environments (Sokolov & Snow, 1994). It

has often been observed that going to school present young children with a range of problems, which are rooted in the change in their relationship with adults from intimate individual contact with parents to relatively impersonal contact with a teacher who is responsible for the care, control, and education of a group of children (Geekie & Raban, 1994). For example, children at school initiate fewer conversations with adults, get fewer turns, ask fewer questions, make fewer requests, and express a narrower range of meanings than they do in their conversations with their parents at home (Well, 1981, 1986).

As parent-child interaction is crucial in the child's language learning and other domains of development, Vygotsky (1987) used the term "zone of proximal development" (ZPD) to characterize the role of parent-child interaction in development. The ZPD is the distance between the level of development indicated by the child's capacity to solve problems independently and the level of potential development indicated by their capacity to solve problems with the guidance and collaboration of other people. With the ZPD, a parent can help raise the level of the child's performances interactively, generating improvements in performance that becomes permanent as the child internalize them. Bruner (1983) recognises children as social beings who, through social interaction, "acquire a framework for interpreting experience, and learn how to negotiate meaning in a manner congruent with the requirements of the culture" (Bruner & Haste, 1987, p. 1), and he also proposes that there is a Language Acquisition Support System (LASS) which parents use to structure the child's language input through their routinised and repeated interaction (Bruner, 1983). During this kind of interaction, parents' talk that supports a child in carrying out an activity has been labeled "scaffolding", which describes the type of assistance only offered when the task requires skills that are beyond the child's capability and is only offered after the child has completed as much task as possible unassisted (Wood, Bruner, & Ross, 1976). Parents' scaffolding is important in children's learning a foreign language because children lose interest more quickly and are less able to keep themselves motivated on tasks they find difficult, and they do not find it as easy to use language to talk about language (Cameron, 2001).

It would be argued that children would be exposed to large quantities of

interlanguage discourse in their families and this has been recognized as inhibiting the children's foreign/second language development (Wesche, 1994). However, this would not be a problem if the parent-child interaction includes negotiation of meaning in terms of the target language as this negotiation serves the function of providing the child with a greater amount of comprehensible linguistic input, and since parents' and children's proficiency levels are likely to obviously differ, they would generate more repair negotiation than speakers with more similar language backgrounds (Oliver, 2002; Varonis & Gass, 1985).

Therefore, family is a good environment for children's second/foreign language development because of the frequent parent-child communication and the scaffolding that parents can offer. However, to really achieve the goal of children's second/foreign language development, there should be a solution for parents to organise the meaningful learning activities so that negotiation of meaning of the target language can take place, otherwise simple interlanguage or pure first language may have negative influences on the second/foreign language development.

2.3.2 The Transitional Shift of CALL

Research in computer assisted language learning (CALL) are witnessing a transitional shift away from cognitivist "communicative" CALL involving drill-and-practice exercises that focus on accuracy and fluency, towards more sociocultural, "integrative" CALL activities that address the importance of agency (Gruba, 2004). Low-level cognitive-task-oriented framework tends to treat task interaction as a series of linear, sequenced actions while high-level social-goal-oriented frameworks tend to focus on situation awareness rather than on actions (Farmer, 2006).

For the low-level cognitive-task-oriented framework, automatic speech recognition (ASR) technology has been applied in computer assisted pronunciation training (CAPT). Hincks (2002) investigated one of this kind of products, *Tell Me More*, by giving eleven students the program as a supplement to a 200-hour course in Technical English, and encouraging them to practice on their home computers. But the result indicates that such pronunciation training using ASR-based language learning

software does not demonstrably improve the mean pronunciation abilities of the students. Tsai (2006) invited students with different levels of language proficiency to test *MyET*, a web-based program that can identify the words spoken into the recording device and provides a scoring mechanism with corrective feedback information to help users improve their pronunciation. But it can only distinguish between beginning and higher level of learners. There was not much difference found between the scores for intermediate and advanced learners. A web-based conversation environment *CandleTalk* (Chiu, Liou, & Yeh, 2007) can recognize a learner's speaking out the selection from the suggested responses list. And this kind of practice is believed to improve learners' sociocultural ability and sociolinguistic ability that aid them to select proper speech acts based on various sociocultural factors and to control over the language forms to perform the speech acts (Cohen & Olshtain, 1994). However, such human-machine conversation system can only enable the computer response correctly by pre-storing corresponding utterances in a dialogue system (Feigenbaum, 2003).

As for high-level social-goal-oriented framework, the development of computer-mediated communication technology has been applied in many synchronous and asynchronous virtual learning environment where real human are involved. For example, Shang (2005) integrated email dialogue journaling approach to the English reading learning process by developing an electronic-based peer collaborative environment, resulting in demonstration that most students maintain positive attitudes towards the potential outcomes of email application on reading achievement and the feature of electronic discussion has a greater direct effect on the reading enhancement. McIntosh, Braul, & Chao (2003) used *Wimba Voice Board*, a plug-in for *WebCT*, to teach English speaking and listening by directing debates based on different dilemmatic topics, and the students posed their speeches to response. The study indicates that students show the greatest enthusiasm in the activities with a high level of peer-to-peer interaction and they show a preference for interaction with classmates with which they are socially comfortable. Baskerville & Robb (2005) reported their experience of using *Moodle* to teach Business English writing, in which teacher-student and student-student interaction was promoted by various online activities, from learning the course resources to submitting assignments, from completing quizzes to discussing topics in

the forum, from teacher instruction to group collaboration.

The development of CALL has been shifting to high-level social-goal-oriented frameworks because the fact that this kind of CALL has created a social environment and promoted collaboration tends to be more consistent with the principles of second language acquisition and constructivist learning. And this kind of CALL provides opportunities to promote interactive language learning and the authentic use of the target language (Chun, 1994). Such kind of interactive language learning plays an important role of communicative interaction in second language acquisition (Long & Porter, 1985; Pica, Young, & Doughty, 1987).

3 Methodology

This chapter explains how the research methods were selected to research the particular topic, why the particular methods were chosen and how data were collected and analyzed to draw meaningful conclusions.

3.1 Research Method Selection

“The case study is the method of choice when the phenomenon under study is not readily distinguishable from its context” (Yin, 2003a, p. 4). The present study adopted this method, because the process of the design, development and implementation of the parental involvement activities was not readily distinguishable from the system of Linguaphone including the curriculum, the teachers, the students and their parents, the conventions, the goals, etc. Furthermore, “case study provides a grounded assessment of context and it represents an unparalleled means for communicating contextual information that is grounded in the particular setting that was studied” (Lincoln & Guba, 1985, p. 359). This characteristic was consistent with the purpose of the present study—as mentioned in Chapter 1, the direct purpose of the present study was to provide the stakeholders of Linguaphone with important and useful information about the parental involvement program that is conducive to their decision making for the subsequent development of the parent-involved e-learning solution. In addition, such research context has made the investigation root in the “naturally occurring case” (Hammersley, 1992) where the variables of Linguaphone’s organisational dynamics of change are not easily identified and are too embedded in the phenomenon to be extracted for study (Merriam, 2001; Pace, 2002). In a sense, the research purposes have bound the research subjects, their contexts, and the prospective outcomes together.

On the other hand, the investigation of the complex interaction between the phenomenon and the context often drives the research to ask “how” and “why”

questions. To work out these explanatory questions, Yin (2003b) believes that experiments, histories and cases studies would be the preferred research strategies. However, because of the impact of the context, the researcher could not create a controlled experimental environment to process any experiment where any factors out of the scope of the research design is expected not to influence the participants' behavior that may affect the results. For example, the researcher could not ask the parents to do so and so too much during the study though they had signed the *Participant Consent Forms*, because they, as Linguaphone's clients, were still receiving the actual services that they bought from Linguaphone and they were not responsible for fulfilling every task required in an experiment, especially when the prospective positive outcome had not been guaranteed. History approach also does not fit as the focus of the study was on contemporary events. Then only case study approach would be reasonable due to its feasibility, which enabled the adoption of a naturalistic approach that involved the study of the parents, the students, and the teachers in their natural surroundings as much as possible while the parental involvement program was being introduced and implemented as a "new service".

However, there is opposition to the idea of case study on the grounds of a "lack of rigor" and "little basis for scientific generalization", and "they take too long and they result in massive, unreadable documents" (Yin, 2003b, p. 10). To minimize these drawbacks, this study also adopted a multi-method approach within the case study framework. It involved a mixture of quantitative and qualitative procedures. Data of the same theme obtained through different approaches were internally and externally verified, which made the research process more rigorous (Brewer & Hunter, 1989). If "naturalness" is considered as a guideline in the case study, keeping the context "natural" can be also seen as a kind of rigor because case study does not allow identifying "evidence" resulted from techniques of investigation (e.g., asking the wrong kind of questions, or aggressive interviewing) (Gillham, 2000). Furthermore, the multi-method approach could also decrease the required time and support the report writing with explicit data, because such approach will lead to complementary strengths and nonoverlapping weakness and then it will not take too much time to deal with weakness and verify the data (Johnson & Christensen, 2004). Analytic generalisation

can also be achieved in multiple-case study (Yin, 2003b), so this study was conducted based on two subcases, and each subcase had two classes in Linguaphone, which might be conducive to the process of generalising “theories”. To be more specific, this study adopted an “instrumental case study” approach with explanation as a key goal. Such approach has become “popular with many academic researchers when they are interested in generalizing and extending the finding in research literatures on various topics” (Johnson & Christensen, 2004, p. 378). With all of these strategies, the case study’s drawbacks may be minimised.

Therefore, this study was conducted within an instrumental case study framework with a multi-method approach that helped obtain as many sources and evidences as possible for a comprehensive understanding of the parental involvement program development within the Linguaphone context in order to explain how to develop a parent-involved e-learning solution for better outcomes of the students’ English learning.

3.2 Participants

The participants of the present study consisted of:

- **The Students and Their Parents:** 31 students and their parents were recruited in a parents meeting during Semester One of 2008 in Linguaphone, who were from Preschool English Level 1 Class 1, Level 1 Class 2, Level 2 Class 1 and Level 2 Class 2. The parents were given the research statement and instruction for participation and they signed the *Participant Consent Forms* for themselves as well as for their young children after the meeting in order to give their ethic approval to the present study.
- **The Teachers:** 4 teachers from the four classes of Preschool English Level 1 and 2 accepted the invitation from Manager of Guangzhou Kids Centre to participate in the case study. These 4 teachers were not the only teacher in each class. Each class had one native English speaker teacher and one non-native English speaker teacher who gave lessons respectively and were

responsible for different parts of the course. For a better communication between the teachers and parents, the parental involvement program only involved the 4 non-native English speaker teachers who spoke the same first language as the parents.

3.3 *Instruments*

3.3.1 Questionnaires

This study used three questionnaires to investigate the parents' Parental Involvement Possibility variables, the quality of the website and the communications between the parents and the teachers. These three questionnaires presented the questions using Likert Scale that requested the parents to rate the degree of agreement to the statement (e.g., "1" was for strongly disagreement while "5" was for strongly agreement). Furthermore, additional individualised open-ended questions were added into the Parental Involvement Possibility Questionnaire for triggering the parents' personal opinions to be reflected to the researcher.

3.3.1.1 *Parental Involvement Possibility Questionnaire*

Parental Involvement Possibility Questionnaire was developed according to a selection of the variables of Hoover-Dempsey & Sandler's Model (see Table 2).

Variable	Question
Parental role	I think that parents' involvement plays an important role in their child's education.
Sense of efficacy	I believe that my involvement in my child's learning will take effect.
General Invitation and Demand	I perceive that my child's teachers want me to be involved in his/her English learning.
	I perceive that my child want me to be involved in his/her English learning.
Specific skill and knowledge	I think that I have the knowledge and skill to help my child with his/her English learning.
Parental time and energy	My employment constrains my involvement in my child's English learning.
	My other family duties (e.g., elder care, housework, etc.) constrain my involvement in my child's English learning.
Modeling	I think that I act as a model for my child to learn English.
Reinforcement	I often give my child interest, attention, praise, and rewards related to their behaviours fundamental to varied aspects of success in English learning. (e.g., show interest in child's practicing English and praise them for that).
Instruction	I often provide my child with direct instruction on English.
Acceptance	I think that my child generally accept my involvement activities in their English learning.
Appropriate strategy	I think that my involvement activities are appropriate for my child's English learning.
Expectation	I think that my involvement activities fit my child's English teachers' expectation.

Table 2: Parental Involvement Possibility Questionnaire's Variables and Questions

3.3.1.2 CALL Evaluation Questionnaire

The second questionnaire was CALL Evaluation Questionnaire developed based on a selection of the variables of Farmer's (2006) CASE framework. CASE stands for four key aspects of learner-computer interaction, namely cognition, activity, social organisation, and environment. The goal of CASE framework is to qualitatively

improve CALL system's design and evaluation. The present study utilise this framework to develop the Questionnaire that represents the context of Linguaphone's e-learning project.

CASE Dimension	Variable	Question
Cognition	Difficulty	I think the difficulty of the online family English activity was acceptable.
	Goal	I think the goal of the online family English activity was clear.
	Complexity	I think the complexity of the online family English activity was acceptable.
Activity	Negotiation	While doing the activities, my child and I negotiated the meaning of some English words and sentences.
	Motivation	While doing the activities, I tried to motivate my child.
	Collaboration	While doing the activities, my child and I collaboratively discussed and solved problems.
	Relationship	While doing the activities, my child and I were in a friendly relationship.
	Conflict	While doing the activities, my child and I could deal with our conflicts appropriately.
	Roles	While doing the activities, the roles of my child's and I were clear.
	Control	While doing the activities, I could control the whole process well.
	Tools	While doing the activities, I could use the functions on the website appropriately.
	Social Organisation	Agency and Work Practice
While doing the activities, my child actively interacted with the website's content.		
		While doing the activities, my child and I actively interacted with each other.
	Convention and Culture	The online family English activities were designed to correspond with the convention and culture of our family.
Environment	Affordance and Artefacts	The online family English activities created the link between English learning and our family's environment.
	Conditions	Our family's environment could meet the requirements of the online family English activities.

Table 3: CASE Framework's Variables and Questions Designed for CALL Evaluation Questionnaire

In order to obtain more information about the general feedback from the parents, additional questions were added to questionnaire based on the variables out of the CASE framework (see Table 4).

Variable	Question
Satisfaction	I satisfied with the design and arrangement of the online family English activities.
	I think my child satisfied with the design and arrangement of the online family English activities
Comfortability	I felt comfortable, relaxed and happy while dong the activities.
	I think my child felt comfortable, relaxed and happy while dong the activities.
Benefit	I benefited from the activities.
	I think my child benefited from the activities.

Table 4: Additional Variables and Questions for CALL Evaluation Questionnaire

3.3.1.3 Parent-Teacher Communication Questionnaire

Parent-Teacher Communication Questionnaire was designed to evaluate the quality of the communication between the parents and teachers during the Linguaphone’s parental involvement program period (see Table 5).

Variable	Question
Channel	I think the communication channel was efficient at conveying information from me to the teacher.
	I think the communication channel was efficient at conveying information from the teacher to me.
Response	I think the teacher responded to the information conveyed from me in time.
	I think the teacher responded to the information conveyed from me effectively.
Usefulness	I think the information from me was useful for the teacher's instructional design.
	I think the information from the teacher was useful for my participating in my child's English learning.
Community	I think I need to know more about how other students and their parents did the family English activities.
	I think I need to know more about the communication between the teacher and other students' parents.
Consequence	I have experienced communicative issue between the teacher and me that has constrained my participating in my child's English learning.

Table 5: Parent-Teacher Communication Questionnaire's Variables and Questions

3.3.2 Telephone Interview

It was not practicable to organise face-to-face interviews and focus groups because this study was conducted internationally and the researcher was physically situated outside of China. So the telephonic interview approach was adopted. The telephone interviews were implemented at the end the parental involvement program. The interviews' key questions and the subset questions are enumerated below.

3.3.2.1 Teacher Interview Protocol

- How do the parents become involved in their child's English learning?
 - ◆ What do you think of the parental involvement activities' content?
 - ◆ Why did some parents participate actively while some others even did

not participate at all?

- ◆ What did the parents say to you in terms of their participation when they met you in the weekend?
- How can an e-learning solution support the parental involvement?
 - ◆ How did the parents communicate with you during the program?
 - ◆ How did you communicate with the parents during the program?
 - ◆ What do you think of the media of the program (the website and the print materials)?
- How can the outcomes of the students' English learning be enhanced in the parent involvement program?
 - ◆ What are the differences of the performance between more active parents' children and the less active ones'?
 - ◆ How did you utilise the parents' feedback to refine your instructional design?
 - ◆ Have the more active parents' children received distinct attention from you in class?

3.3.2.2 Parent Interview Protocol

- How did you become involved in your child's English learning?
 - ◆ Can you describe the process of your doing family English activity with your child?
 - ◆ What kind of English learning activities did you and your child like the most? And why?
- How can an e-learning solution support the parental involvement?
 - ◆ Which part of the website did you found the most useful for parental involvement? And why? (for Level 1 Class 1 and Level 2 Class 1)
 - ◆ If there will be a website that can support the parental involvement in Linguaphone, what services on the website do you expect? (for Level 1 Class 2 and Level 2 Class 2)
 - ◆ During your participation, have you identified any problem that could

be solved by computers and the Internet? (for Level 1 Class 2 and Level 2 Class 2)

- How could the outcomes of your child's English learning be enhanced in the parental involvement program?
 - ◆ What kind of activities do you think was the most effective to enhance the outcomes of your child's English learning?
 - ◆ What aspects your child's English learning have been promoted the most? (e.g., motivation, attitude, new words remembering and application, frequency of speaking English in daily life, problems solving, etc.) And what do you think were the causes of the progress?

3.4 Procedure

3.4.1 Parental Involvement Program

After the participants were recruited, the students and the parents from the four classes were divided into two groups which were given different forms of family activity packages during the five-week period. Level 1 Class 1 and Level 2 Class 1 formed the e-Learning Group and Level 1 Class 2 and Level 2 Class 2 formed the Print Group. In each of the five weeks, the four teachers provided the researcher with their lesson plans and activity suggestions, and then the researcher designed and developed the activity packages. For E-Learning Group, the packages were delivered online through a learning management system—Moodle. The parents from E-Learning Group were given access to the packages on the website. As for the Print Group, the packages were printed and given to the parents every weekend when the students attended the classes.

The main objective of the packages was to provide the students with opportunity to go over and practice what they learned in class during the next week under the help of their parents. The content of the packages consisted of: (1) a summary of what was taught in class, (2) instruction on listening and reading using the CD and VCD, (3) English games, (4) instruction on practicing spoken English in real life, and (5) a

discussion forum for E-Learning Group and a feedback form for Print Group.

The audience of the packages was defined as the parents, but not the students. The students could not complete the tasks within the packages by themselves as most of the instructions were written in the text that was expected to be readable only by adults. So the parents needed to explain the instruction to their children and directed their children to complete the tasks. Some of the tasks required the students and their parents to work collaboratively. For E-Learning Group, when the tasks were finished, the corresponding prepared feedback information became available to the parents and the students. And the parents could also ask questions and leave feedback on the website. The teachers or the researcher would reply them in one or two days. As for Print Group, the parents returned the completed task sheets and the feedback forms to the teachers every weekend. And the teachers answered the parents' questions face-to-face when the parents picked up their child.

3.4.2 Data Collection

Before the parental involvement program commenced, the parents were given the Parental Involvement Possibility Questionnaire to complete, and their demographic information was also collected at that time. During the five weeks, the parents' online activities, and the computer-mediated communication among the parents, teachers and the researcher were captured and archived. The returned tasks sheets and feedback forms were kept for analysis. After the five weeks, the parents were given the Parental Involvement Possibility Questionnaire, the CALL Evaluation Questionnaire and the Parent-Teacher Communication Questionnaire to complete. The four teachers and the parents were interviewed individually by telephone, the processes of which were audiotaped.

3.4.3 Data Analysis

The data analysis strategy of the present study was *interim analysis* (Miles & Huberman, 1994), which means that the researcher alternated between data collection and data

analysis throughout the research process (i.e., collecting data, analysing the data, collecting additional data, analysing those data, and so on). The researcher used this approach to support the parental involvement program so that the parental involvement activities could be designed and developed according to the needs of the parents and the teachers. The instruments were not designed at one time. The design of different questionnaires and the interview protocols in different phases were guided by the successively deeper understanding of the research topic led by the data analysis in previous phases (e.g., the Parent-Teacher Communication Questionnaire was developed based on the analysis of Print Group's returned feedback forms which indicated that some parents were not satisfied with the parent-teacher communication). At the end, all the qualitative data were restructured according to their internal relationships and the research questions by recoding and recategorising. The quantitative data were analysed by both descriptive and inferential strategies in order to support the qualitative analysis as well as to find out the cause-effect relationships.

4 Results

This chapter presents the results of the study according to the three research questions: how the parents were involved in their children’s English learning, how the e-learning solution supported the parental involvement, and how the students’ English learning enhanced as a result of the parental involvement. Before answering these questions, an overview of the participants and their response and participation is provided.

4.1 Overview

4.1.1 Overview of the Students and the Parents

Figure 3 and 4 indicate the students’ location in the four classes, the two groups, their genders and the ratios of their ages.

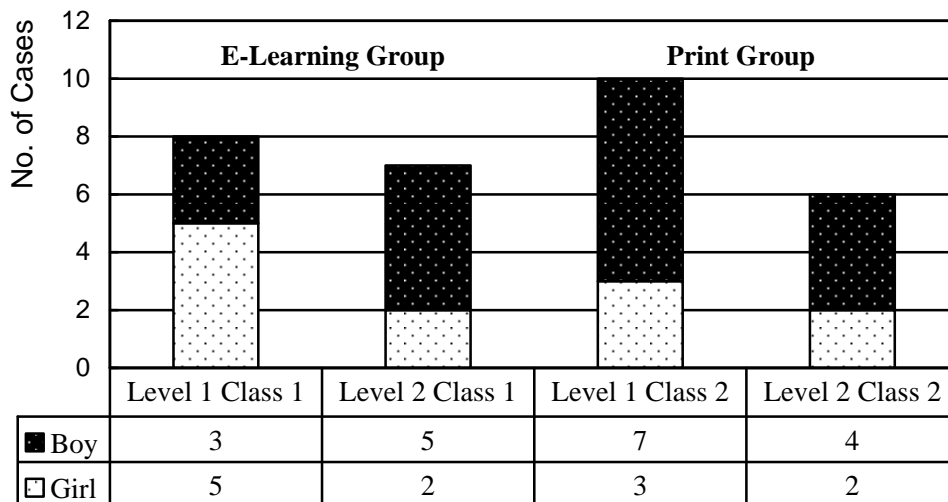


Figure 3: Number of Student Participants

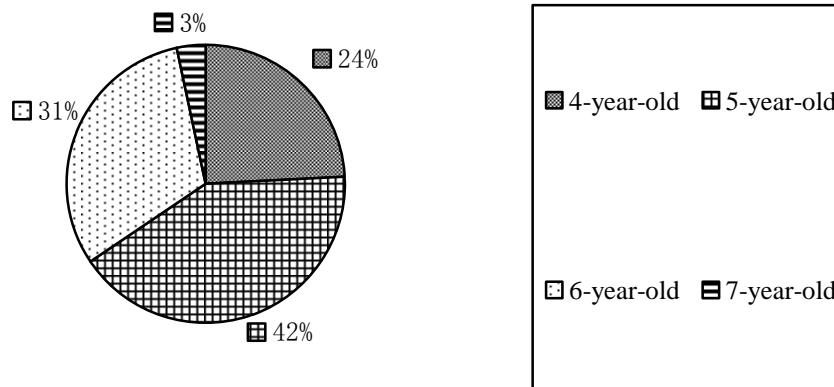


Figure 4: Ages of Student Participants

The term “Level” for the Preschool English courses in Linguaphone refers to the difficulty of the course and the duration that the students have attended the Preschool English courses. Level 1 is for the new students in their first semester while Level 2 is for those students in their second semester, who are expected to have finished the course of Level 1. So “Level” is not necessarily related to the students’ ages (e.g., a six-year old student may be in Level 1 while a four-year old student may be in Level 2). To verify this claim, a *t*-test is carried out and it indicates that the students of the two levels are not statistically significantly different in terms of their ages ($t = -0.09$; $df = 27$; $p = 0.928$). The average age of these students is approximately 5 years (Mean = 5.14).

The families of the student participants usually assigned either the father or the mother to be involved in the child’s English learning but some of the parents preferred both of the father and the mother working together to process the activities. Figure 5 indicates the numbers of the particular parents involved in each class and group

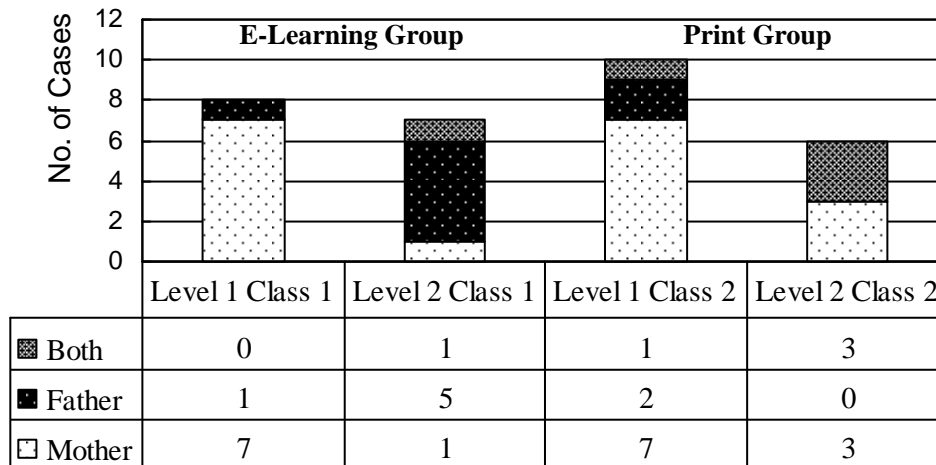


Figure 5: Number of Particular Parents

92% of the parents received higher education with more than a half having earned an academic degree, and 19% of the parents were post-graduated (see Figure 6). A majority of the parents were working full time in non-education sectors (see Figure 7 and 8).

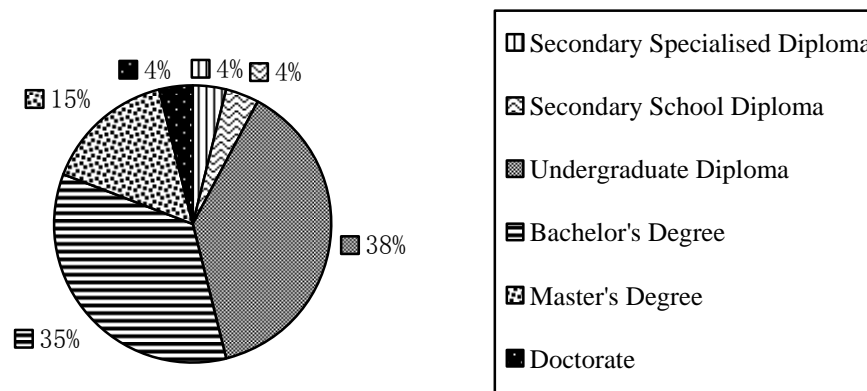


Figure 6: Parent Participants' Educational Backgrounds

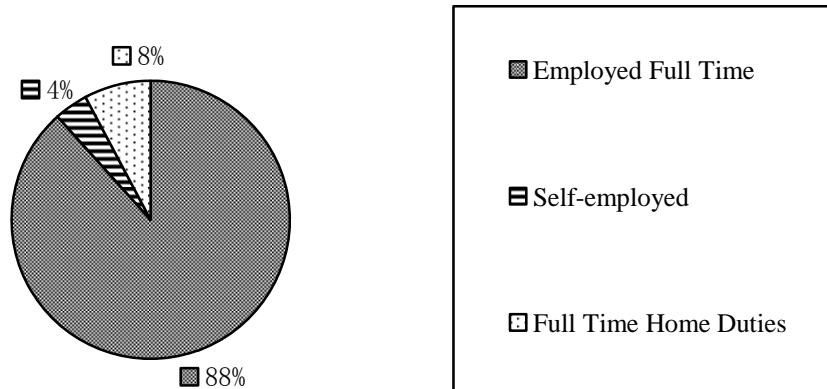


Figure 7: Parent Participants' Employment Status

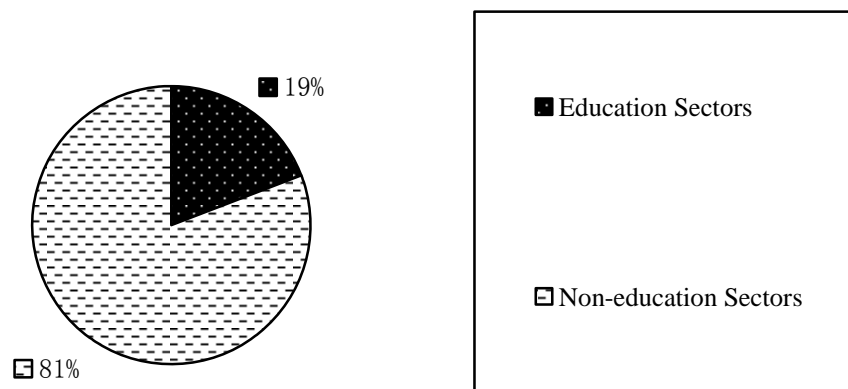


Figure 8: Fields of Parents' Job Occupations

4.1.2 Response Rates

Although the parents had signed the consent forms before the parental involvement program commenced, not all of them have participated in the parental involvement program subsequently due to various reasons. Table 6 shows the overall questionnaires' response rates of the Pre-Parental Involvement Possibility Questionnaire (Pre-PIPQ), Post-Parental Involvement Possibility Questionnaire (Post-PIPQ), CALL Evaluation Questionnaire (CALLEQ), and Parent-Teacher Communication Questionnaire (PTCQ).

Item	Expected Response	Actual Response	Rate
Pre-PIPQ	31	25*	77.4%
Post-PIPQ	31	20	64.5%
CALLEQ	7†	6	85.7%
PTCQ	31	20	64.5%

Table 6: Overall Questionnaires' Response Rates

4.1.3 Participation Rate

Throughout the five weeks, it did not indicate that all the participants actually participated. The present study considered parents' "log in" as participation for E-Learning Group, and considered parents' returning complete task sheets and weekly feedback forms as participation for Print Group. Those who at least participated once were considered as actual participants. Table 7 indicates the overall participation rate. During the five weeks, 5 students' parents reported that they decided to discontinue their participation because of lack of time and they had not yet tried to participate in the activities before they made the decision.

Item	Expected Amount	Actual Amount	Rate
Actual Participants	31	21	67.7%
Mean of Weeks Participated	5	2.86‡	57.2%

Table 7: Overall Participation Rate

Besides, in terms of the mean of the weeks participated, an independent-sample *t*-test indicates that the parents of the students from Level 1 and Level 2 participated in the program for significantly different amounts of weeks at the 0.05 level ($t = -2.236$, $df = 29$, $p = 0.033$). In other words, Level 2's E-Learning Group and Print Group both participated in the program much more actively than those from Level 1.

* 1 of the 25 cases was invalid, so there were only 24 valid response considered in the subsequent analysis.

† Only those parents from E-Learning Group who logged in the website more than twice were given the questionnaire.

‡ Calculated based on the data from actual participants.

4.2 Parental Involvement in Children's English Learning

4.2.1 Parental Modeling in Children's English Learning

Parental Involvement Possibility Questionnaire (PIPQ) was developed according to a selection of the variables of Hoover-Dempsey & Sandler's Model (see Table 2). Before and after the parental involvement program, the parents were given the questionnaires to complete. This was to help the present study draw the focus on specific variables for parental involvement that have been significantly changed after the program. The results of each variable were scored 1 to 5 points according to the 5-point Likert Scale of the parents' agreement with the statements. The more positive the response was, the higher it was scored. The overall result was shown in Table 8.

Group	Level	Ref. Number	Pre-test (N = 24)		Post-test (N = 20)	
			Sum	SD	Sum	SD
E-Learning Group	1	1	45	0.967	N/A	N/A
		2	N/A	N/A	N/A	N/A
		3	50	0.987	51	1.038
		4	45	0.776	N/A	N/A
		5	44	0.65	N/A	N/A
		6	N/A	N/A	45	0.967
		7	N/A	N/A	45	0.967
	2	8	52	1.155	53	0.954
		19	60	0.768	59	0.660
		20	58	0.967	N/A	N/A
		21	48	0.63	N/A	N/A
		22	44	0.768	58	0.877
		24	63	0.376	59	0.519
		25	63	0.555	56	0.480
Print Group	1	9	57	0.768	58	0.776
		10	50	0.835	N/A	N/A
		11	52	0.707	N/A	N/A
		12	57	1.044	N/A	N/A
		13	60	0.65	N/A	N/A
		14	48	0.48	N/A	N/A
		15	50	0.555	43	1.251
	2	16	N/A	N/A	58	0.776
		17	53	0.641	50	0.555
		18	N/A	N/A	46	0.660
		27	52	0.577	52	0.913
2	28	48	0.947	50	0.689	
	29	48	0.63	48	0.630	
	30	61	0.48	46	1.330	
	31	52	1.581	43	0.751	
Summary			Mean	SD	Mean	SD
			52.500	6.022	51.111	5.769

Note:

“Ref. Number” stands for the code that the researcher gave to each student’s parent (i.e., the present study calls the parents their reference numbers rather than their names).

“Sum” stands for the sum of the scores of each variable.

“Mean” stands for the mean of the scores of each of the two groups.

“SD” stands for standard deviation of the scores.

“N/A” stands for lack of data because the parent did not return the questionnaire.

Table 8: Descriptive Statistics of the Results of Pre- and Post-PIPQ

From the table, we can see that the mean of post-test is lower than the pre-test, which indicates that, the parents may be less likely to be involved in their children’s English learning after the program. To explore more deeply in the internal structure of the data, a paired variables *t*-test was carried out and the researcher found that the only variable significantly different in the pre- and post-tests was “modeling” ($t = 2.482$, $df = 13$, $p = 0.028$). Furthermore, an independent sample *t*-test shows that E-Learning Group and Print Group were significantly different in terms of parental modeling in the post-test at the 0.05 level ($t = 2.532$, $df = 18$, $p = 0.021$), but they were not significantly different in the pre-test (see Figure 9). Also, Print Group’s parents rated this variable significantly lower in the post-test than in the pre-test at the 0.05 level ($t = 2.553$, $df = 7$, $p = 0.038$).

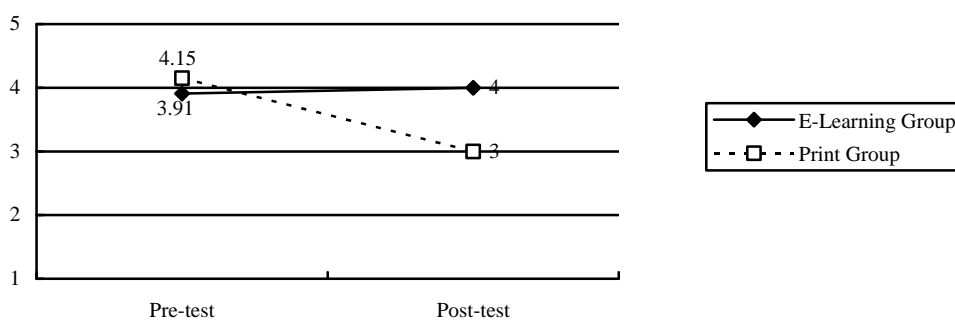


Figure 9: Means of the Scores of “Modeling” in Pre- and Post-PIPQ

Based on the above findings, the result can be interpreted as: after the parental involvement program, Print Group’s parents were much less likely to act as a model for their children to learn English, and such significant change has distinguished them from E-Learning Group’s parents as E-Learning Group’s parents basically remained the same in terms of modeling.

This claim is supported by the qualitative data. Out of the 34 returned weekly feedback forms from 11 parents in Print Group, there were 6 forms reporting that the activities had not been finished because of lack of time, for example:

Parent #15: *My child usually practiced listening and reading by himself, because I didn’t have enough time.* (Comment on a weekly feedback form translated from the Chinese version)

Parent #28: *Because I'm too busy and Cindy sleeps too early, we don't have time to speak English.* (Comment on a weekly feedback form translated from the Chinese version)

And there were 12 forms requesting the teachers to correct their children's error that they identified, for example:

Parent #26: *Please pay attention to my child's lips when he speaks English.* (Comment on a weekly feedback form translated from the Chinese version)

Parent #31: *She was not sure the difference between "push" and "pull". And her pronunciation of "jump" was incorrect. Please teach her about these.* (Comment on a weekly feedback form translated from the Chinese version)

In the telephone interview with Parent #15, the mother said she was not confident enough since her son said her pronunciation was incorrect:

My son insisted that his pronunciation was correct. I wanted to let the teacher justify it and teach him about that, but I didn't have the teacher's telephone number so I just left it. (Interview transcript translated from the Chinese version)

These parents' behaviours were actually setting negative examples for their children because they were (1) showing their children using "lack of time" as an excuse for not finishing the tasks, (2) transferring the responsibility to "teachers" rather than showing how to try their best to solve the problems with their children collaboratively, and (3) not utilizing relevant materials (CD, dictionary, etc) to explore the debatable topics within the activities.

In contrast, E-Learning Group's parents have never reported the tasks uncompleted (although sometimes they actually had not completed) and they have never requested the teachers to do specific things except for technical issue. This may be because their communications with the teachers were all on the online forum in the website, which made the "private conversation" public. That is, the parent-teacher interaction was available for all the parents. So the parents might tend to be more careful when they posted message because the message had multiple audiences.

Therefore, the reason why Print Group's parents rated their "modeling" much lower than they did before the program, may be in relation to the difficulties that they could only realise after the program commenced. They might have a new understanding of their roles during dealing with the difficulties and this new understanding might be based on the privateness of their involvement behaviours. That is, they were not under the pressure from other parents' watching and then they might "dare" to set the negative examples to the children.

4.2.2 Parental Involvement Preferences

The ways that the parents from different groups participated in the family English activities were different. E-Learning Group's parents tended to work with their children together to implement the family English activities, while Print Group's parents thought they were supposed to monitor their children's learning process and to report the results to the teachers.

As for E-Learning Group, because of using computer was compulsory for completing the activities, the parents needed to spend time on directing their children to use the cursor and click appropriate locations on the screen. And they also needed to explain almost everything appeared on the screen to their children:

Parent #25: My son always asked me to tell him what the instruction text on the screen meant, so I had to explain them and also read the text that he could not understand by himself. (Interview Transcript translated from the Chinese version)

A question was added to the Parental Involvement Possibility Questionnaires for 7 active parents from E-Learning Group, asking them how they defined their role while doing those activities with their children. 4 of them answered that they acted as their children's "partners" and the rest 3 said they acted as their children's "assistants". Those who answered "partner" seemed to be involved in the family English activities more deeply in their interpretations, for example:

Parent #24: My husband and I not only assisted our daughter using the computer but also learned English collaboratively. For example, we used

“role play” approach to act out the English episodes within the games and the stories again and again. Our daughter enjoyed it very much.

(Interview transcript translated from the Chinese version)

The “role play” approach was also adopted by Parent #3 who interpreted her role as a “partner”. But differently, she only used this approach when she and her daughter were not around the computer. She set a fixed time (2 hours) every week for the online activities. The most wonderful task that this family has completed was the game on “looking for colours at home”. This topic was initiated on the forum by the teacher after the English new words of several colours were taught in class. The mother worked with her daughter together to find out all the examples of the colours at home and posted their answers to the forum:

***Parent #3:** My father’s pant is grey... My clothes and my shoes are white... The paper is white. The telephone of my home is white... My umbrella is blue... My shirt is orange... My cup is yellow... (Extracts from Parent #3’s 7 postings on the forum)*

It is difficult to imagine that how a four-year old girl could post the above message online if her mother did not work with her together. Though this message looks very simple, the Moodle’s user activity log report shows that it took 57 minutes for them to submit the 7 postings. During that process, 59 web pages were viewed or loaded in the forum.

When E-Learning Group’s parents had got any questions or just wanted to report something, they could post the message to the forum and the teachers or the researcher would reply the questions in one or two days. Different from the Print Group, most of the parents from E-Learning Group used English to interact with the teachers rather than using their first language. Most of the postings were the parents’ reporting their children’s English learning progress and problems:

***Parent #22:** She can understand and do as what I said, and she can also answer me “yes” or “no”, but she seldom ask [sic.] questions in English. (One of Parent #22’s postings on the forum)*

***Parent #25:** for english number, the boy can’t recognize the words, but can understand the Arabic numerals [sic.] and say in english. (One of*

Parent #25's postings on the forum)

The teachers replied these postings with suggestions and instruction for the parents to continually help their children with English learning. On the forum, some other parents also reported the technical issues, expressed their appreciation on the activities, the materials and the teachers' effort, asked questions about the situation in class, and informed the teacher that they have finished the tasks. The ratio of the themes of the message that they posted are shown in Figure 10.

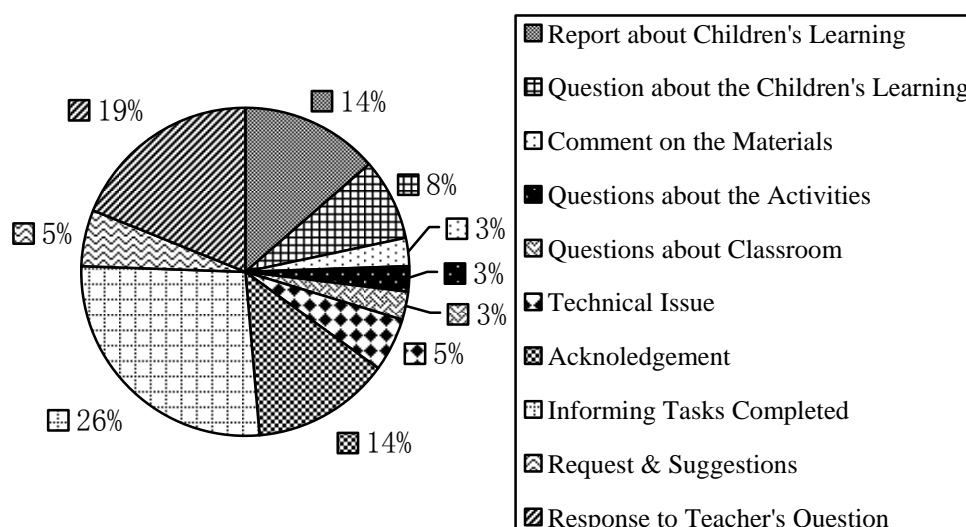


Figure 10: Ratio of Themes of Message Posted by E-Learning Group

As for Print Group, the most significant difference from E-Learning Group is that the Print Group's parents expressed strong attitudes and explicit opinions on the weekly feedback forms and the message was usually written in three steps: (1) report what their children have achieved or not achieved, (2) make a judgment and (3) make some requests and suggestions. From Figure 11, we can see that reporting about children's learning, expressing attitudes on children's learning and making requests and suggestions have taken a large ratio of the message.

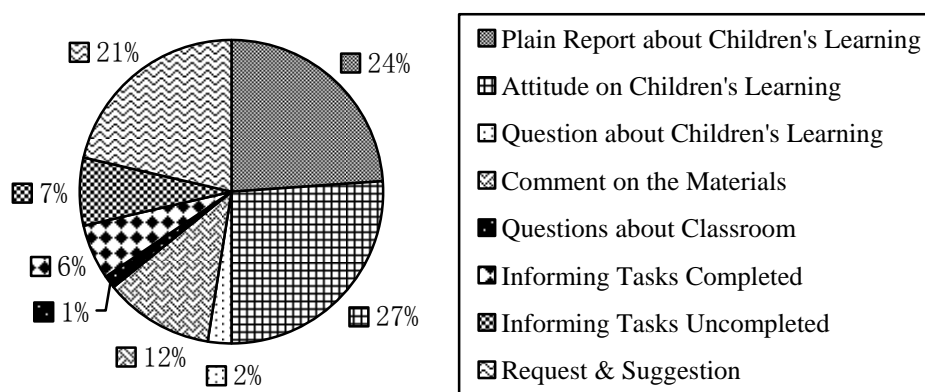


Figure 11: Ratio of Themes of Message from Print Group’s Feedback Forms

The content of Print Group’s parents’ reporting about their child’s learning was different from that of E-Learning Group’s parents. Print Group’s parents were more concerned with the curriculum related issues. In other words, the content was usually stuck on specific tasks or language knowledge mentioned in the tasks, rather than their children’s more general performance, for example:

Parent #17: She was not sure the meaning of “a” and “an” on Page 4, “I can walk upside down” on Page 5 and the pronunciation of the word “grey” on Page 8. (Comment on a weekly feedback form translated from the Chinese version)

Parent #26: He could read following me, but he did not understand the word “help”. (Comment on a weekly feedback form translated from the Chinese version)

A judgment on the status of the child’s learning was usually made on each feedback form, for example:

Parent #31: She has made great progress compare to last week. However, she couldn’t read very proficiently with the appropriate intonations. (Comment on a weekly feedback form translated from the Chinese version)

And then the parents made the requests and suggestions on the feedback forms so that the teachers could teach their children accordingly. The requests and suggestions

included correcting their children's errors, focusing on the weak areas, improving the materials, etc. From the telephone interview with Parent #30, the mother thought the best way for her to participate in her son's English learning was to check his errors, mistakes, and weak points that the teacher might not have identified in class. So making the requests and suggestions was crucial for solving all of those issues as the teachers should know what was happening.

4.2.3 Summary

It is evident that two groups' parents use different approaches to participate in the activities and consequently provided the teachers with different kinds and different amounts of information, because they had different understanding and perceptions of the activities. According to Epstein's (1992, 1995, 1996) classification of types of parental involvement, E-Learning Group's parents tended to devote themselves to "Learning at Home" activities, while the Print Group's parents were more willing to "Communicating" with the teachers so that they could influence the teachers' "Decision Making" process in order to gain more attention from the teachers for their children.

4.3 *E-learning Solution Supporting Parental Involvement*

4.3.1 Parent-Involved Networked Learning Model

The e-learning part of the parental involvement program was designed based on Goodyear et al.'s (2004) Networked Learning Model (see Figure 2) and the present study has adopted and emphasised the model's central theme—connectiveness. However, the actually proposed solution may have gone beyond the model as new factors have been taken into account so that it has been adapted to a specific application context. Figure 12 illustrates the e-learning solution proposed in the present study, which adds an extra agent—parent, in the middle between the tutor and the student—the

parent's child. In such situation, learning resources are not necessary to be totally electronic. Through the leverage of the parents' collaboration in the network, the teacher could easily get connected with the students and utilise various non-electronic learning resources from each family to process their continual instruction when the students were away from the classrooms.

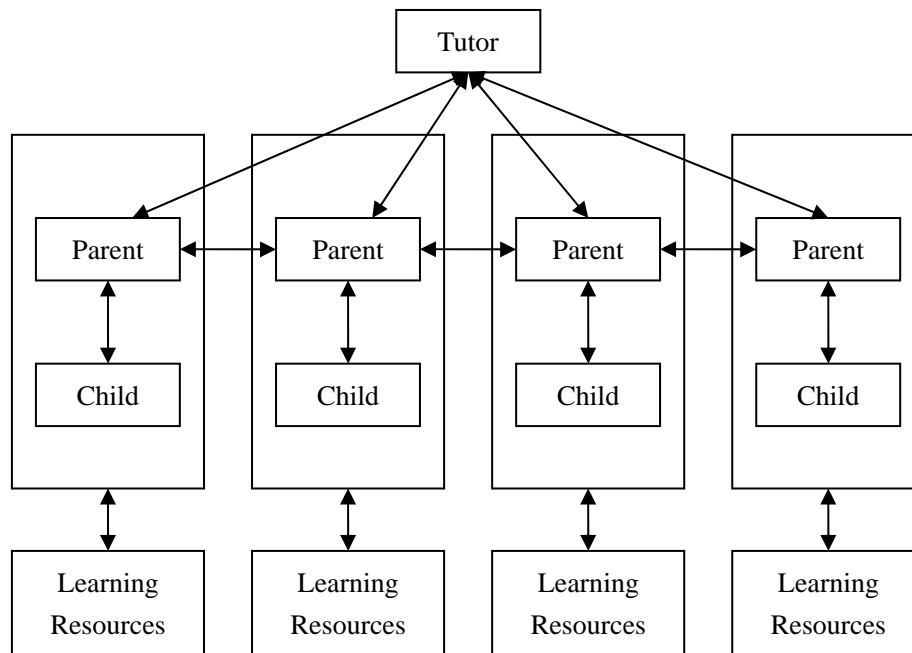


Figure 12: Parent-Involved Networked Learning Model

4.3.2 Promoting Connections

In order to look deep into the connectiveness in the parental involvement program, especially the connection between the teachers and the parents which was expected to be the most important node in the network, a Parent-Teacher Communication Questionnaire was designed and given to the parents to complete at the end of the program (see Table 5). The result of this questionnaire provided important clues for the subsequent telephone interview with the parents and the teachers. From Table 9, we can see that the means that the E-Learning Group's parents rated the communication channel and the teacher's response (Mean = 3.78, 4.11, 3.78, and 3.78) were higher than the Print Group's parents did (Mean = 3.71, 3.91, 3.73 and 3.55). This means that the e-learning network may have provided a better communication channel for the parents

and the teachers, and may have increased the response effectiveness and efficiency. An independent sample *t*-test was carried out, but it indicates that there is no statistically significant difference between the two groups in terms of the communication channel and the teacher's response.

No.	Question	Result		
		Group (N)	Mean	SD
1	I think the communication channel was efficient at conveying information from me to the teacher.	E-learning (N = 9)	3.78	0.833
		Print (N = 11)	3.73	0.905
2	I think the communication channel was efficient at conveying information from the teacher to me.	E-learning (N = 9)	4.11	0.601
		Print (N = 11)	3.91	1.044
3	I think the teacher responded to the information from me in time.	E-learning (N = 9)	3.78	0.441
		Print (N = 11)	3.73	0.905
4	I think the teacher responded to the information from me effectively.	E-learning (N = 9)	3.78	0.667
		Print (N = 11)	3.55	0.934
5	I think the information conveyed from me was useful for the teacher's instructional design.	E-learning (N = 9)	3.44	0.527
		Print (N = 11)	3.91	0.701
6	I think the information conveyed from the teacher was useful for my participating in my child's English learning.	E-learning (N = 9)	4.44	0.726
		Print (N = 11)	4.00	0.632
7	I think I need to know more about how other students and their parents did the family English activities.	E-learning (N = 9)	4.33	0.707
		Print (N = 11)	4.00	0.632
8	I think I need to know more about the communication between the teacher and other students' parents.	E-learning (N = 9)	4.00	0.707
		Print (N = 11)	3.91	0.539
9	I have experienced communicative issue between the teacher and me that has constrained my participating in my child's English learning.	E-learning (N = 9)	2.00	1.00
		Print (N = 11)	2.45	1.128

Note:

“Mean” stands for the degree of the parents' agreement of the statement (1 = strongly disagree, 5 = strongly agree).

“SD” stands for standard deviation of the responses to each statement.

Table 9: Descriptive Statistics of the Results of Parent-Teacher Communication Questionnaire

As for the usefulness, the result of a one-sample *t*-test for Question 5 and 6 shows that E-Learning Group's parents thought that the information conveyed from the teacher to them (Mean = 4.44) was significantly much more useful than the information conveyed from them to the teacher (Mean = 3.44) at the 0.01 level ($t = -4.243$, $df = 8$, $p = 0.003$). The similar situation of the significant difference was not applied to Print Group though they still thought high of the information conveyed from the teacher to them. However, Print Group's parents rated the usefulness of the information conveyed from them (Mean = 3.91) higher than E-Learning Group's parents did (Mean = 3.44). This perception may have led Print Group's parents to provide much more detailed message on the weekly feedback forms than E-Learning Group's parents did online.

The parents' intent to create an online community was initially investigated through Question 7 and 8. E-Learning Group's parents rated these two statements (Mean = 4.33 and 4) higher than the Print Group parents did (Mean = 4 and 3.91). Table 10 indicates that E-Learning Group's parents' perceptions on the parent-teacher communication channel (Question 1 and 2) are significantly negatively correlative to their intent to know more about the communication between the teacher and other students' parents (Question 8). This means that if the E-Learning Group's parents find the parent-teacher communication channel is good enough, they do not need to know more about other parents. But this kind of selection mechanism does not exist in Print Group. Instead, as shown in Table 11, Print Group's parents' responses to Question 7 and 8 were significantly correlated at the 0.01 level, so they preferred to know more about both of the other families' activities and the communication between the teacher and other parents. One of the parents from Print Group has complained about lack of parent-parent and family-family communication in the interview:

Parent #16: *The weekly feedback forms were useless for us. No matter how much we had written on the forms, there would be no reply from the teacher at all... I understand that the teacher might be busy... If Linguaphone can organise some activities for the parents and let all the parents know each other, we will benefit from the information from other parents and families... (Interview transcript translated from the Chinese version)*

No.	1	2	3	4	5	6	7	8
2	.804(**)							
3	.529	.577						
4	.800(**)	.693(*)	.661					
5	-.316	-.175	.478	-.040				
6	-.023	-.127	.347	.229	.399			
7	-.283	-.392	-.134	-.088	-.112	.649		
8	-.849(**)	-.883(**)	-.401	-.795(*)	.335	.243	.500	
9	-.600	-.832(**)	-.567	-.375	.000	-.172	.177	.530

Note:

(**) means the correlation is significant at the 0.01 level (2-tailed).

(*) means the correlation is significant at the 0.05 level (2-tailed).

Table 10: Correlations of PTCQ Completed by E-Learning Group

No.	1	2	3	4	5	6	7	8
2	.818(**)							
3	1.000(**)	.818(**)						
4	.904(**)	.773(**)	.904(**)					
5	.430	.261	.430	.542				
6	-.350	-.454	-.350	-.339	.000			
7	.175	.151	.175	.169	.226	.500		
8	.354	.161	.354	.307	.241	.586	.879(**)	
9	-.748(**)	-.810(**)	-.748(**)	-.733(*)	-.322	.280	-.140	-.090

Note:

(**) means the correlation is significant at the 0.01 level (2-tailed).

(*) means the correlation is significant at the 0.05 level (2-tailed).

Table 11: Correlations of PTCQ Completed by Print Group

In Table 11, Print Group's parents' responses to Question 9 were significantly negatively correlated to Question 1 to 3 at the 0.01 level and to Question 4 at the 0.05 level, which indicates that the communication channel and the responses from the teachers are crucial for avoiding any communicative issue that constrains the parental involvement.

On the other hand, E-Learning Group's online activities log in the Moodle system shows that the parents have spent much time watching other users' profiles and blogs. Figure 13 illustrates each type of online activities captured by the system. From the Figure, up to 19% of events were on user profiles or user blogs. However, actually there was no content in any users' profiles and blogs since no one had contributed any content there. The researcher has interviewed some of E-Learning Group's parents regarding this strange phenomenon, for example:

Parent #23: *When I browsed the discussion forum, I just clicked other users' names and went to their profiles to see whether there was anything new there. Basically I kept checking other parents' profiles every week. But there was nothing there from the beginning to the end. What a pity!*

The Researcher: *So why didn't you contribute some articles or photos to your profile and your blog in the website?*

Parent #23: *Well...I saw nobody did so, and I also didn't know what to upload there.*

The Researcher: *What did you expect other parents to upload?*

Parent #23: *I didn't have specific expectation. I didn't know what other parents would upload. So I just kept looking...*

(Interview transcript translated from the Chinese version)

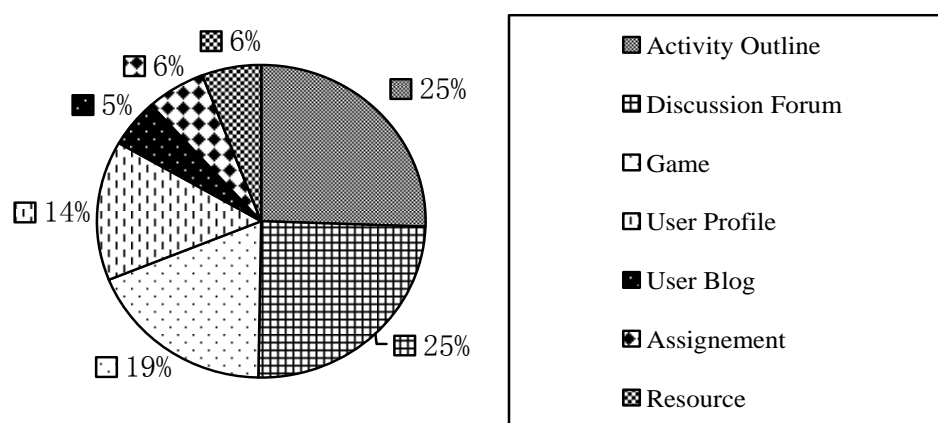


Figure 13: E-Learning Groups' Online Activities

What these parents thought were similar—nobody had uploaded anything to his or her profile and blog, so they did not know what to do because there was no “example”. Hence, it would be better for the program to provide the parents with more instruction and work examples about how they can contribute to the online community in terms of personal profiles and blogs.

4.3.3 Summary

The e-learning solution has promoted the connection between the parents and the teachers by the “communication and information” and “learning and instruction” approaches that Blanchard (1997) proposed, which could not be achieved by traditional print mode, especially for teacher-parent feedback circulation. However, the promoted point has been limited in parent-teacher communication. Both of E-Learning Group and Print Group would like more interaction between parents and parents, and they have thought this approach can overcome the drawbacks of pure parent-teacher communication. Although the online learning platform has provided E-Learning Group’s parents with a communication environment, they still did not interact much. This is because providing online social networking tools does not equal that an online community has been created. More effort on e-moderation from Linguaphone will be needed so that the parent-parent communication can be actually promoted (Salmon, 2000).

4.4 *Enhancing the Outcomes of Children’s English Learning*

In the present study’s context, there was no opportunity for the researcher to measure the students’ English learning outcomes directly or observe their progress from time to time. Hence, the present study uses two indirect approaches to identify the children’s English learning outcome—(1) the questionnaire to evaluate the CALL environment created and (2) the parents’ and teachers’ observations.

4.4.1 Enhancing English Input and Interaction by CALL

One of the e-learning solution's aims is to promote the families' English linguistic input and interaction environment which is conducive to the children's English language learning and development. To look deep into how a family CALL environment can enhance the English input and interaction among family members, a CALL Evaluation Questionnaire was designed based on Farmer's (2006) CASE framework, and given to 7 active parents from E-Learning Group to complete at the end of the program. The descriptive statistics results are shown in Table 12.

From the Table, we can see that, generally the parents responded positively to the statements. More than 60% of the statements were rated more than 4 (4 = agree). From Question 1 to 6, the parents reported high level of satisfaction and benefit, but they did not feel very comfortable while using the website. This may due to some of them lacked computer skills and the design of the interface has not been improved much and was basically kept the same as the original status of the Moodle system. And some of E-Learning Group's parents had to contact the teacher for assistance when they experienced the login problems.

In terms of the cognition dimension, the goal of the system was not very clear (Mean = 3.83). When talking about the goals in the telephone interviews, different parents' descriptions of their goals varied, and the goals they described were usually their personal goals, rather than the program's goals. However, they satisfied with the difficulty (Mean = 4.17 and complexity of the activities (Mean = 4).

As for the activity dimension, most of the variables were satisfied by the parents except negotiation of meaning (Mean = 3.5) and parents' controlling the whole process (Mean = 3.5). Lacking negotiation of meaning will decrease the effect of learning a second/foreign language (Oliver, 2002; Varonis & Gass, 1985). So this weakness should be fixed as soon as possible.

Dimension	No.	Question	Mean	SD
Overall Evaluation	1	I satisfied with the design and arrangement of the online family English activities.	4.33	.516
	2	I think my child satisfied with the design and arrangement of the online family English activities	4.17	.753
	3	I felt comfortable, relaxed and happy while dong the activities.	3.83	.753
	4	I think my child felt comfortable, relaxed and happy while dong the activities.	3.83	.408
	5	I benefited from the activities.	4.33	.516
	6	I think my child benefited from the activities.	4.00	.632
Cognition	7	I think the difficulty of the online family English activity was acceptable.	4.17	.408
	8	I think the goal of the online family English activity was clear.	3.83	1.169
	9	I think the complexity of the online family English activity was acceptable.	4.00	.632
Activity	10	While doing the activities, my child and I negotiated the meaning of some English words and sentences.	3.50	.837
	11	While doing the activities, I tried to motivate my child.	4.20	.447
	12	While doing the activities, my child and I collaboratively discussed and solved problems.	4.00	.707
	13	While doing the activities, my child and I were in a friendly relationship.	4.33	.516
	14	While doing the activities, my child and I could deal with our conflicts appropriately.	4.00	.000
	15	While doing the activities, my child's and my roles were clear.	4.17	.408
	16	While doing the activities, I could control the whole process well.	3.50	.548
	17	While doing the activities, I could use the functions on the website appropriately.	4.17	.753
Social Organisation	18	While doing the activities, I actively interacted with the website's content.	3.83	.753
	19	While doing the activities, my child actively interacted with the website's content.	3.50	.837
Environment	20	While doing the activities, my child and I actively interacted with each other.	4.00	.632
	21	The online family English activities were designed to correspond with the convention and culture of our family.	3.50	.548
	22	The online family English activities created the link between English learning and our family's environment.	3.67	.516
	23	Our family's environment could meet the requirement of the online family English activities.	4.33	.816

Note:

“Mean” stands for the degree of the parents’ agreement of the statement (1 = strongly disagree, 5 = strongly agree).

“SD” stands for standard deviation of the responses to each statement.

Table 12: Descriptive Statistics of the Results of CALLEQ

As for social organisation and environment dimensions, the connections between the users and the websites' content were not strong enough (Mean = 3.83 and 3.5) and should be enhanced. In terms of convention and affordance, they are concerned with some of the tasks in the program which required the parents to help the students find out the objects with specific letters or colours at home, or to help the students telephone their relatives and friends to complete a questionnaire in order to practice the new words they learned. These tasks may form an objection to the convention of families as they required the parents' active participation and they had not tried to do these before. So the parents did not agree that the activities were designed to correspond with the convention and culture of their families (Mean = 3.5). The links between English learning and family's environment was specially considered when the website's content was designed (e.g., the students needed to find the answers to the questions at home). However, the users were still not very satisfied with it (Mean = 3.67). The reason for this perception is that the parents have different understanding of the source for the "link". For example, in the interview, Parent #24 said she also did other English activities with her child to yield more language input and interaction in their daily life, but those activities might not be within the parental involvement program and were much more than required by the program. In other words, the "link" that the program provided was not the "link" that the parents expected. This is because the parents were not given the right to participate in the design process (Carr-Chellman & Savoy, 2004), but they actually know more about the link between English learning and the context of their families.

Overall, some key points (or fatal points) for enhancing English input and interaction environment were not satisfied very much by the parents, such as negotiation of meaning, the link between English learning and the home environment. Hence, a user-design approach (Carr-Chellman & Savoy, 2004) is suggested here for the future improvement of the system.

4.4.2 Let the Students Know about their Parents' Participation

Most of the parents have observed their children's progress and reported to the teachers

through the discussion forum or the weekly feedback forms. But what they reported was not about the comparison on the students' learning outcomes before and after the parental involvement program. Rather, they reported what the students really learned from the class as observed by the parents. For example, Parent #23 posted a message on the discussion forum after she observed her son could use English directly in daily life:

***Parent #23:** When we had lunch at noon on Sunday in Linguaphone's Kids Centre, Peter accidentally got his student card wet. To my surprise, he said to Gigi: "It's wet!" directly in English. I have been happy for a long time because he could apply what he had learned to his daily life.*
(One of Parent #23's postings on the forum translated from the Chinese version)

Some may argue that even though the parental involvement did not exist, the students would still be making progress from time to time because they did take the training in class. However, as Hoover-Dempsey noticed that "for the child, knowing that the teacher guides the parents to help with the assisting the teaching, they are intrinsically motivated to learn" (Hoover-Dempsey, 2006, cited in Dave, 2007, p. 77), the parental involvement program could help visualize this process, and this help could have great impact on the children's perception of the interaction between their parents and teachers. When such kind of message was posted to the forum, it kept being online since then. Every time when the mother or the son wanted to read the message again, they could do it. That is, the parental involvement program has helped the students get aware that their parents are now participating, which may have led to the students' more effort to learn.

4.4.3 Multiple Language Representations

Teacher #2 noticed that those students who used the system to review the lesson have performed distinguishingly in class. For example, Parent #25 and his son were the most active users online, so the student has become the most active learner in class, who responded to Teacher #2's questions very quickly. And Teacher #2 believes that this progress is rooted in the multiple sources for the student to experience different

representations of the language. That is, after the students were taught the new words and the sentences in class, through family activities delivered by the system, they have got an opportunity to know other representations of the words and the sentences in their family environments including the interaction among the family members. For example, the word “green” was taught by the pictures of green plants in class, and the students were required to look for green objects (e.g., a green coat, curtain, etc.) at home and report them on the website under the help of their parents. Another example was that, the sentence “Press the button and wait.” was taught in the context of the Hare and Tortoise Story in class, and the website showed 4 pictures of daily life episodes (crossing the road, taking a photo, taking the elevator and turning on the television), and then the students were required to report whether they needed to wait after pressing the buttons. This kind of experiences has increased and enriched the language input to the students.

4.4.4 Parent-Teacher Face-to-Face Communication

Teacher #1 found that even though Parent #8 had not yet logged in the system successfully because of lack of computer skills, she has kept talking to Teacher #1 face-to-face when she picked her child up because she wanted to know more how to be involved in her child’s English learning. Parent #8 has become aware that she should do more for her son’s English learning, rather than just being an observer, especially when she did not know how to use the website to do the English activities with her child and this has made her worried. Eventually, Teacher #1 noticed that the student has made great progress since the face-to-face communication had been increased.

4.4.5 Customised Instruction in Class

Both of E-Learning Group’s and Print Group’s feedback has provided the teachers with useful information for their instruction. Through the feedback, they knew what the students’ weak points were. Then they kept an eye on specific students’ specific performance. In other words, the feedback has become important resource for the

teachers to analyse the learners in the instructional design process.

Teacher #3 (Print Group) noticed that Parent #15 kept actively participating in the program and returning all the finished homework and feedback forms. Teacher #3 then paid more attention to Student #15 in class in terms of the problems that Parent #15 mentioned in the feedback forms. At the end, Teacher #3 noticed that Student #15 could perform much better than his peers.

Teacher #2 (E-Learning Group) was pretty satisfied with the online system. While Teacher #3 had to go through the feedback forms on the spot quickly when the parents returned them to her, Teacher #2 had much more time to analyse the students' problems and prepare the class according to her interaction with the parents during the week. In a sense, the online learning platform has increased the efficiency of the teachers' instructional analysis process.

However, Teacher #1 and Teacher #4 did not think this analysis was necessary for such small-class language learning program where there were no more than 10 students per class. They think they can notice every student's need in class and adjust their course activities immediately.

4.4.6 Parents' Learning English for Themselves

Some of the parents' English are much fluent as they have overseas experiences, but the majority of the parents only have basic English language skills. The parental involvement activities have driven E-Learning Group's parents to learn and practice their own English language skills. As mentioned in Section 4.2.2, E-Learning Group's parents preferred to practise their English writing in the non-threatening online environment when they interacted with the teacher. The behaviour that the parents learned English for themselves has increased the students' motivation and is expected to be one kind of "modeling", for example:

Parent #25: I have only some basic English skills and I would like to learn more English. When my son noticed that I was also trying to learning English, he became much motivated and would like to practise English with me. Sometimes he pretty enjoyed "teaching" me English.

(Interview transcript translated from the Chinese version)

However, Print Group's parents tended to have less enthusiasm to utilise the opportunity to increase their own English skills. Rather, some of them hoped the teachers to work more on their children to overcome the parents' lack of English skills, for example:

***Parent #18:** I only know a little bit about English. I don't know how to help my son with his English homework. And I'm not able to talk with him in English in our daily life. Can you [the teacher] give more effort on my child so that such problem can be overcome?* (Comment on a weekly feedback form translated from the Chinese version)

4.4.7 Summary

Throughout the parental involvement program, the students' English learning outcomes were enhanced in various ways. The crucial factor of these "ways" was the amount of English input and interaction (Halliday, 1975; Sokolov & Snow, 1994). In the program, such environment was equipped by the family English activities, the teachers' specific instruction and the parents' direct or indirect support.

5 Discussion and Conclusion

This chapter summarises and explains and discusses the results' meaning in the light of the purpose of the present study and then draws conclusions of the practical implications of the findings, followed by clarifying the limitations of the study and encouraging future research in the field.

5.1 Summary of the findings

The findings on the participants show that only about one third of the parent participants actually participated. And the actual participants have averagely only participated in no more than 3 weeks. Among these participants, Level 2's two groups participated significantly more than Level 1.

In the program, the behaviours of parental involvement were different from family to family, but the Print Group's common ground was that their perception of their modeling role in families was likely to be fading, which was significantly different from E-Learning Group. Besides, these two groups' parents used different styles to participate in the program—E-Learning Group's parents tended to work with their children together and share information with the teacher while Print Group's parents tended to monitor their children and request the teachers to provide specific instruction to their children in class.

The e-learning solution supported the parental involvement mainly through its promotion of the connections between the parents and the teachers. As a result, the teachers could easily provide the families with instruction and relevant materials for their English learning activities during the week. But the connection between the parents was weak, which has led to the parents' complaint.

Finally, from the parents' and the teachers' observation, the program generally has achieved its main goal—enhancing the outcomes of the students' English learning.

Such achievement was based on many approaches where English input and interaction were promoted.

5.2 *Implications and Suggestions*

5.2.1 Multiple Solutions

There are differences between levels, between deliver modes, between parental preferences: Level 2's parents were more interested in the parental involvement program while Level 1's parents tended to less participated in it; the online mode provided more efficient and non-threaten approaches for communication and instruction while the traditional mode helped yield more informative feedbacks from the parents; some parents tended to work with their children collaboratively while others might prefer to just monitor or assist their children but let them learn individually. Hence, multiple solutions for different groups of parents are needed. Here "multiple" has two meanings. One is to create different programs for different parents that suit their personal contexts. The other is to create a program that consists of various approaches where most of the users can benefit from the program.

5.2.2 Instruction on Parental Involvement

Most of the parents are not working in educational sectors and they have confirmed that they did not know much education in the interview. This indicates that there has been a need to overcome the parents' lack of meta-knowledge of parental involvement. The instruction within a parental involvement program should not only about the subject matters but also the knowledge, approaches, skills, strategy and tools for the parents to become meaningfully involved in their children's learning. This kind of instruction should not be a one-off section (e.g., a parent meeting, a manual, etc.). Instead, it should be a continual effort to support parental involvement, including identifying the parents' weakness and providing the parents with scaffolding.

5.2.3 Promoting Connections

The e-learning solution has not promoted much parent-parent connections. Although Goodyear et al.'s (2004) Networked Learning Model (see Figure 2) does not specifically consider the learners' parents' roles, parent-parent connection is particularly important in parental involvement program because the construction of parents' role of assisting their children is influenced by the other parents' involvement in their children's education (Hoover-Dempsey & Sandler, 1997). Besides, parent-parent connection also increase efficiency of information distribution within the parental involvement network, promote collaboration between parents, and extend the parental involvement activity types from "learning at home" and "communication" to "decision making" and "collaborating with community" (Epstein, 1992, 1995, 1996). As a result, if parent-parent interaction is promoted, the parental involvement's content would be enriched by their various contributions, and the multiple solutions approach mentioned in Section 5.2.1 would not become necessary because the collaboration among the parents would be "unifying" their thoughts, preferences and behaviours.

5.2.4 Promoting English Input and Interaction

Since the e-learning solution for parental involvement is rooted in a second/foreign language learning context, its design, development and implementation should be stuck as close as possible to second language acquisition principles and theories. From the findings of the CALL evaluation, two crucial factors for a good CALL environment—promoting negotiation of meaning and linking English learning to the family environment, have been left behind. Lacking of these could result in the failure of children's second language acquisition in the family environment (Halliday, 1975; Sokolov & Snow, 1994).

To promote the two crucial factors so that more English input and interaction can be yielded, more effort should be devoted to the transitional shift of CALL (Gruba, 2004). Many of the games within the parental involvement package in the Linguaphone

case were still drill-and-practice exercises (e.g., asking the students to link pictures to the correct words, phrases or sentences), although a limited ratio of them have been designed towards to the target of the transitional shift—being sociocultural and integrative (e.g., directing the parents to participate in the games and offer help, asking the students to use English to investigate which colour and animal were the most popular among their relatives and friends by telephone under the help of their parents, etc.). However, comparing to designing family English activities within the low-level cognitive-task-oriented framework (Farmer, 2006) that can probably be done by the design and development teams in a fixed period, developing parental involvement program within the high-level social-goal-oriented framework seems not easy because it requires the continual and dynamic effort across the whole educational organisation (e.g., the teachers need to investigate the social capital of each student and participate more in the interaction with the students and their parents; the e-learning designers need more information that the teachers have directly obtained from the students; the administration staff need to provide the parents with intensive technical support and parental involvement advice so that the community among the teachers, the parents and the students can be constructed, rather than becoming fragmentary caused by some parents' inactive participation; and the parents even need to be involved into the e-learning design process to ensure the link between English learning and the family environments can be constructed; etc.). As a result, the subsequent development of the e-learning solution may need to redefine and reconstruct the internal organisation and the duties of the relevant staff across departments so that the collaborative effort can be maximised.

5.3 *Limitations of the study*

The present study was conducted internationally and all the research materials were delivered via the Internet and the international courier. The researcher has not physically been to Linguaphone's Guangzhou Kids Centre, so the researcher could not use observation, focus group and face-to-face interview as research instruments.

However, these instruments are important for the qualitative data collection for a case study (Yin, 2003b). In terms of the implementation of the parental program, the absence of the researcher might lead to many uncontrolled issues, such as communication problem that caused the parents' misunderstanding. The researcher could not provide the parents with sound instruction on the participation in a face-to-face setting, which might result in low actual participation rate.

5.4 *Future research*

The present study had only limited opportunities to study parent-involved e-learning solution in the preschool English weekend class context. The three themes—parental involvement, e-learning solution and second/foreign language learning, were the foundation for the present study. However, these three themes have not been explored deep enough on the conceptual level. Future research is encouraged to pay more attention to the three themes' internal relationship and principles that can be applied in various contexts.

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