School of Social Sciences and Asian Languages

How Effective Are Technology-Enhanced Teaching Techniques
in the EFL Classroom?

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DECLARATION

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgment has been made.

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

Signature: ....

Date: ....

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ABSTRACT

The past decade has seen almost exponential growth in online course offerings across the globe and online courses have now become ubiquitous. However, our current understanding of the effectiveness of this mode of delivery in learning, especially when compared to traditional face-to-face classroom instruction, remains insufficient. In fact, researchers have been engaged in an extended debate over the effectiveness of 'online' versus traditional 'face-to-face' classroom instruction. As part of this ongoing debate, there is now extensive research into the respective merits of these forms of instruction. This particular study responds to some gaps in this research. The first gap is that much of this work represents science-related subjects and relatively few studies concern the teaching and learning of foreign languages, such as English. Second, whereas there is a plethora of research outside Indonesia, relatively little, if any, has been conducted with student populations from this country, thus limiting our understanding of the merit of new technology in this particular context. Conducted in Indonesia, this study examines students' learning experiences and learning outcomes in three different modes of delivery: conventional face-to-face, online, and hybrid instruction. Students across the three groups reported that they had experienced an interesting learning experience, a high level of interactivity, and quality learning. However, the online group reported more negative experiences than the other two groups, both in terms of types and frequency. Interestingly, it also reported unique positive learning experiences not found elsewhere. In terms of learning outcomes, as indicated by students' pre- and post-test scores, all groups experienced a significant increase in their post-test scores. The difference in the groups' post-test scores, after controlling for pre-existing differences in the pre-test, proved to be insignificant. This finding provides strong support for the well-known 'non-significant phenomenon', but offers new insights into the merit of new technology in the EFL classroom in this particular context. Overall, both students' learning experience and their learning outcomes lead to the conclusion that online learning appears to be a viable mode of instruction, despite it being more challenging than hybrid and face-to-face tuition. The implications of these findings for the integration of technology into the language classroom have been critically examined in this thesis.

NOTE TO THE TEXT

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CHAPTER 1

INTRODUCTION

This section briefly discusses the proliferation of online learning in higher education and reviews research examining the effectiveness of new technologies in learning, especially when compared to conventional face-to-face classroom instruction. It identifies discrepancies in these studies and describes how the present study addresses such discrepancies. The rationale for this study will be provided, followed by a description of the thesis structure and a chapter summary.

1.1 Rationale of the Study

Online learning programs have increased quite sharply over the past ten years (Rovai, Wighting & Lucking 2004), either as a primary mode of instruction or as a supplement to traditional face-to-face classroom instruction (Olson & Wisher 2002) and this phenomenon is most noticeable in higher education (Kerr 2006; Roach & Lemasters 2006; Rovai & Baker 2005). Since the number of higher education institutions seeking to integrate new technology into their curricula has increased dramatically over the past decade, web-based course offerings have now become omnipresent[1] (O'Neal *et al.* 2007). Such jargon as online learning, e-learning, flexible learning, and web-based learning, to name a few, have become common in higher education today.

However, as online unit offerings have become ubiquitous and enrolment in such units has increased quite significantly (Montelpare & Williams 2000), the quality of such types of education begins to be critically questioned. A particular concern has always been whether or not the quality of education offered by new technologies matches that offered in a conventional face-to-face classroom. While the proponents of online learning argue that the integration of technology into the curriculum offers a number of benefits over face-to-face classroom instruction,

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[1] Interestingly, along with the ubiquity of online learning programs, there also seems to be a trend in higher education nowadays that everything involving technology is considered up-to-date and sophisticated, and the absence of technology is considered regressive.

others maintain that our understanding of the impact of such courses on students' overall learning experience remains insufficient (Bernard *et al.* 2004). Similarly, whereas online learning has been extensively lauded by the advocates of this form of learning, some educators have voiced their concerns about the decision to entirely replace face-to-face classroom instruction, which has proved to work for centuries, with new technologies. Despite this caveat, web-based unit offerings continue to increase exponentially.

In other words, despite a tremendous growth of online learning programs over the past decade, the true effectiveness[2] of such instructional methods relative to conventional face-to-face classroom instruction has always been a subject of debate (Detwiler 2008; Pucel & Stertz 2005). The debate is relevant not only in the early stages of their inception, but also as research continues to mount in the field (Bernard *et al.* 2004). Strong empirical evidence is, therefore, required if we are to justify the merit of new technologies in education. Following on from this debate, research studies have examined the effectiveness of online learning relative to face-to-face classroom instruction. However, these studies have yielded conflicting and inconsistent findings, as reported below.

For example, while some studies suggest that, in terms of students' learning outcomes, online courses are comparable to traditional face-to-face classroom instruction (e.g. Block *et al.* 2008; Shelley, Swartz & Cole 2008), other studies report the superiority of either face-to-face classroom instruction (e.g. Pucel & Stertz 2005; Ury 2004) or online tuition (e.g. Burkhardt, Kinnie & Cournoyer 2008; Detwiler 2008; Liu 2005). One possible explanation for these conflicting findings is that research examining the effectiveness of online learning relative to conventional face-to-face classroom instruction was conducted with different subjects having differing characteristics. Although an online startegy may be suitable for teaching certain subjects, it may not be equally effective for teaching others (Banas & Emory 1998).

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[2] The meaning of the term 'effective' is debatable. For the present study the term has been used to refer to both students' overall performance in the course and their evaluation of the course and of mode of delivery. As such, effective here simply means high performance and high level of satisfaction with both the course and the mode of delivery.

Therefore, while some research studies reported that online learning was comparable to, or even more effective than, face-to-face classroom instruction for example, other studies reported quite the opposite. Again, these conflicting findings may partially be attributed to differences in the characteristics[3] of the subjects under investigation. In this case, Rovai and Barnum (2003) convincingly argue that one of the problems that makes the generalisability of research concerning the effectiveness of Web-based-instruction difficult is that the characteristics of the unit under investigation vary from study to study, thus yielding different conclusions regarding the effectiveness of online learning. Similarly, Reasons, Valadares and Slavkin (2005) note from Russel's compilation of the results of previous studies into the effectiveness of online learning that the performance of students attending online and traditional face-to-face instructions could differ, depending on the unit type and outcomes under investigation. Therefore, it is necessary that research into the effectiveness of online learning be conducted with a diverse array of subjects so that the effectiveness of new technologies can be better understood in relation to the subjects taught.

Olson and Wisher (2002) note, however, that in terms of content area, discrepancies were found in the studies published between 1996 and 2002; whereas the overwhelming majority of research studies investigating the efficacy of online courses focused on science-related subjects, only two studies (around four percent) were related to language teaching. Similarly, Wang and Sun (2001 p. 540) also observed that "research in the area of language learning at a distance has occupied only a marginal status in the entirety of distance education research, both in terms of quantity and quality". Of course, more studies were conducted in the wake of this report but, still, research on the effectiveness of online learning in language classrooms remains one of the areas receiving relatively little attention compared to that given to other subjects as mentioned above. Fukushima (2006) reported that, while an online learning strategy has long been used with other subjects, particularly those related to science and economy, it was only during the

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[3] Of course, other factors, such as student characteristics, pedagogy, and teacher characteristics (as discussed in chapter five) may also come into play.

past decade that such a method began to be utilised in language classrooms. Online learning was introduced in language classrooms because it has been suggested that new technologies could be advantageous for language learning (Zhao 2003).

While research into the effectiveness of online learning has also been conducted in language classrooms, this research tends to focus almost exclusively on reading and writing skills and little research, if any, has been conducted with the teaching of English Grammar as a distinct unit offered within higher education. Clearly, further empirical studies on the effectiveness of online learning relative to conventional face-to-face classroom instruction are critical (Pucel & Stertz 2005; Silver & Nickel 2007) to better understand the effectiveness of new technologies for teaching subjects that have so far received little attention, including English Grammar as mentioned above.

Following on from the debate over the effectiveness of online relative to conventional face-to-face classroom instruction, some researchers (e.g. Young 2002) have recommended the adoption of a hybrid method (a mixture of face-to-face and online) because it is believed to be more effective than either pure online or pure face-to-face instruction. The introduction of hybrid instruction is also expected to reconcile heated debates regarding the effectiveness of new technologies relative to conventional face-to-face teaching. As a result, three different modes of instruction are currently practised at a tertiary level: conventional face-to-face, pure online, and hybrid instruction. Because hybrid instruction has also become increasingly popular, just like pure online learning, it is natural that its true effectiveness also begins to be brought into question. While the proponents of hybrid learning argue that a hybrid mode of instruction combines the strength of both face-to-face and online formats, such an argument has also been criticised, for it could potentially combine the weaknesses, rather than the strengths, of face-to-face and online instruction (Abdullat & Terry 2004; Terry & Lewer 2003). Additionally, although hybrid instruction has gained immense popularity in higher education, there is a dearth of research examining its true effectiveness (e.g. Grandzol 2004; Gutierrez *et al.* 2004) despite the fact that the hybrid model has always been regarded as combining "the best of both

worlds" (Young 2002). This paucity of research into the effectiveness of a hybrid mode of instruction is understandable given the fact that hybrid learning is a relatively new field (Gutierrez *et al.* 2004).

The advent of online and, more recently, hybrid methods warrants further investigations into the effectiveness of these delivery formats compared to conventional face-to-face classroom instruction. Examining the effectiveness of these three instructional methods – face-to-face, hybrid, and online – is therefore necessary to better understand how each of these three learning environments might impact on student learning and learning experiences. Key questions to consider include the following: What positive and negative learning experiences are associated with each of these learning environments? How similar or different are students' learning experiences? And most importantly, given students' learning experiences, how viable is each of the three delivery formats from the standpoint of the students, rather than of the researchers or educators? Again, this understanding is crucial given the fact that these instructional methods are now popular in higher education despite the fact that there is a dearth of research examining both students' learning experiences and their learning outcomes as a result of attending one of the above modes of instruction.

While a few studies have examined the effectiveness of online and hybrid learning relative to conventional face-to-face classroom instruction for teaching units such as computer sciences (Abdullat & Terry 2004; Rivera & Rice 2002), relatively little research, if any, has examined the effectiveness of these three delivery formats in language classrooms. This is particularly true as far as the teaching of English Grammar as a unit offered within higher education is concerned. Consequently, little is known about the effectiveness of these three different learning environments for teaching this particular subject.

Furthermore, while a great deal of research examining the effectiveness of online and hybrid learning is conducted in English-speaking countries, most noticeably America and Europe, relatively little, if any, research has been

conducted with student populations from Indonesia[4]. Despite this lack of research, however, there are reports that some universities, particularly those located on the island of Java, have now begun to offer online units (Ali 2004; Yuhetty 2002). Although the number of these universities is very small at present, it is clear that it is just a matter of time before online unit offerings will also experience an exponential growth in this country. Obviously, examining the effectiveness of new technologies in this particular context with these student populations is crucial so that an informed decision can be made regarding the merit of these new technologies in education in general, and in language classrooms in particular. Just because students in the United States have positive experiences with using technology in learning, it does not necessarily mean that this experience will also be shared by students from other countries. This is because different cultures may view the importance of technology quite differently. In fact, in some cultures, even the value of a television is still being questioned as it could promote pornography, for example, let alone the Internet. In other words, people's attitudes to technology may differ from culture to culture and it is, therefore, necessary that research examining the effectiveness of new technologies in education be conducted with student populations from different countries and different cultural backgrounds. Indonesia is among the countries where research into the effectiveness of new technologies in education in general, and in language classrooms in particular, is still rare.

Furthermore, although a significant number of studies have examined the effectiveness of Web-based learning on the basis of students' learning outcomes, as indicated by test scores, little research has examined students' learning experiences (Hara & Kling 2000). Again, this is particularly true in the context of the teaching of English Grammar to speakers whose mother tongue is not English. Examining students' learning experiences with online learning is critical because it is only by investigating their learning experiences can we understand their positive and negative experiences with this new delivery format. In other words,

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[4] In fact, based on a search of data bases and local journals, no single article has been published regarding the effectiveness of new technologies relative to conventional face-to-face classroom instruction within this particular context, which is particularly surprising given the growing popularity of the Internet in Indonesia.

understanding students' experiences with online learning is critical, for it enables a better understanding of the viability of the technology from the standpoint of the students. In the end, the effectiveness of online learning hinges on students' experiences with this new learning environment.

Investigating both students' experiences with online learning and their learning outcomes is therefore crucial for at least two reasons. Firstly, while students may have a positive perception of, and attitude to, online learning, they may not necessarily perform well (as indicated by their test scores) in this learning environment. Secondly, whereas they may find a certain learning environment highly challenging, they may perform quite well in that learning environment. Therefore, examining both students' learning outcomes and their learning experiences is critical because they provide us with a clear picture regarding the effectiveness of this new technology in learning. As I will suggest in Chapter 3, use of both qualitative and quantitative data is vital to this endeavour.

While research studies examining students' perceptions of an online learning environment do exist in the literature (e.g. Huang 2002; O'Malley & McCraw 1999; Stepp-Greany 2002), much of this research relies heavily on the administration of questionnaires (normally the Likert scale type) where students are required to respond to questions already prepared by researchers by selecting one of the most appropriate options that applies to them. However, while this approach to eliciting students' learning experiences is convenient, focused, and straightforward, there are a number of pitfalls to such an approach. Firstly, this approach requires that students select one of the options provided by the researcher, when it is entirely possible that none of the options applies to them. In this situation, very often, participants are forced to select an option although it is not applicable to them, thus producing bias in the results of such studies. Secondly, such an approach may miss many important experiences of the students. Thus, in order to truly understand students' learning experience with online learning, it is important that students become the 'story tellers' of their own experiences. In this way they are free to express themselves regarding their positive and negative experiences. This is particularly important because, at times,

what is considered important by researchers and educators is not necessarily shared by the students, and the reverse is also true.

1.2 Thesis Structure

Chapter one, as the Introduction, provides the rationale of the study. It briefly discusses the proliferation of online learning, which warrants investigations into their effectiveness relative to conventional education. Previous studies into this area, along with the controversy surrounding the debate over the effectiveness of new technologies in education, will be briefly identified and discussed. Finally, a rationale for examining the effectiveness of different delivery formats, particularly in the context of foreign language teaching, employing both qualitative and quantitative analysis is provided.

In Chapter two, Literature Review, an account of the literature pertaining to the present study is presented. This chapter consists of two parts. The first part provides an overview of Distance Education, which becomes the root of all online learning programs. Previous studies into this area will be extensively reviewed and discussed. Additionally, since the present study examined the effectiveness of the three different modes of delivery within the context of teaching and learning, a pedagogical theory, Constructivist Learning Theory, will also be presented as it is considered relevant and applicable to learning across the three different learning environments.

Chapter three, Research Methodology, outlines how the present study was designed and conducted. Information on the participants, research objectives and research questions, research design, instrumentation, procedure, online learning tools employed in the present study, data collection method, and data analysis is presented. The rationale for employing both qualitative and quantitative approaches in trying to understand the effectiveness of new technologies is further emphasised here.

Chapter 4, Findings and Analyses, presents the findings of the present study along with their analyses. Two different types of findings will be reported here: qualitative and quantitative findings. While the former findings sconcern students' learning experiences when attending one of the three different modes of

instruction, the latter findings concern students' learning outcomes as indicated by their test scores.

In Chapter 5, Discussion and Implications, a discussion of the findings of the present study along with their subsequent implications for the integration of technology into the EFL[5] classroom will be provided. A critical evaluation of the current debates on the effectiveness of technology-enhanced teaching techniques relative to conventional face-to-face classroom instruction will also be presented in light of the findings of the present study.

Finally, Chapter 6, Conclusions and Recommendations, presents conclusions regarding the findings of the present study with respect to the research questions and research objectives, and also offering a number of recommendations. Further, this chapter recognises some of the shortcomings of the present study.

1.3 Chapter Summary

The advent of the Internet made possible the use of the technology as a teaching/learning tool at various levels of education, particularly within higher education. In particular, technology has been used to deliver course materials. Whereas some institutions are currently experimenting with hybrid instruction, employing both face-to-face and online learning, others are now embarking on full online courses. As a result, three major modes of delivery – conventional face-to-face, hybrid, and pure online instruction – are currently practised in higher education institutions with hybrid and online formats continuing to gain wider acceptance all over the world.

However, advancements in computer technology appear to be ahead of our understanding of its impact on students' learning and learning experience. In particular, the question as to whether students attending hybrid and online courses have learning experience comparable to those attending conventional face-to-face classroom instruction (Cooper 2001) has always been central to the debate about the effectiveness of technology-enhanced teaching techniques. Obviously,

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[5] English as a Foreign Language

understanding students' perceptions of and attitudes to different modes of instruction is critical, simply because it has a direct implication on the effectiveness of the instructional method (Mansour & Mupinga 2007). On the face of it, not much research has examined how students actually perceive these three different modes of instruction with respect to their learning and learning experience, despite the fact that, as mentioned previously, online and hybrid course offerings have experienced an exponential growth (Mansour & Mupinga 2007). This lack of research into the effectiveness of the above three different modes of instruction is particularly noticeable in foreign language classrooms.

While a great deal of research examining the effectiveness of new technologies has been conducted in English-speaking countries, there is a paucity of research within the Indonesian context. I suggest that research needs to be conducted with student populations from different cultural backgrounds simply because the importance of technology may vary from culture to culture. As mentioned previously, if people in some cultures are still arguing about whether or not we should have televisions in homes, then the importance of examining students' learning experiences with new technologies becomes immediately apparent. In examining such issues, employing both qualitative and quantitative approaches is critical, for they provide a more complete picture of how effective new technologies are perceived to be by the students as indicated by their learning outcomes and learning experiences.

CHAPTER 2

LITERATURE REVIEW

This discussion of the theoretical framework pertaining to the study will be divided into two main parts. The first provides an account of the learning theories, particularly cognitive constructivism and sociocultural constructivism, as they are applied to different learning environments. The second part offers a critical review of the development of distance education and the emergence of Web-based distance education. Research studies in this area will be evaluated and discrepancies in these studies will be demonstrated.

2.1 Learning Theories

I will begin by discussing the relevance of Piaget's cognitive constructivism and Vygotsky's sociocultural constructivism to the present study. In particular, I will suggest that constructivist pedagogy is relevant to learning in face-to-face classrooms, but it is particularly relevant to online learning environments through the use of both synchronous and asynchronous communication. I will further suggest that these two learning theories are valuable in informing instructional design for both face-to-face and online instruction. Finally, I will also touch on Second Language Acquisition theory, especially in relation to constructivist theory and technology-enhanced language learning

2.1.1 Constructivism

The past two decades has seen the strong influence of constructivist philosophy in our educational practices (Jones & Brader-Araje 2002). Its influence is so strong that Phillips (1995 p. 193) likened it to 'a secular religion'. Ironically, whilst constructivism has gained momentum, defining the term proves to be a challenging task, as different authors tend to employ the term to refer to different concepts, philosophical beliefs, or theoretical positions (Wheatley 1991). Nonetheless, having a clear definition of the theory is critical if we are to

scrutinise its potential implications on educational contexts, particularly where classroom practices are concerned.

Saunders (1992 p. 136) defines constructivism "as that philosophical position which holds that any so-called reality is, in the most immediate and concrete sense, the mental construction of those who believe they have discovered and investigated it". Similarly, Crowther (1999 p. 18) finds that the term 'constructivism' refers to the fact "that as people experience something new they internalize it through past experiences or knowledge constructs that have been previously established". In other words, constructivism is a theory of learning, a theory of knowing, which posits that meaning is constructed by individual learners, using their previous experience as a reference point to interpret or make sense of a new phenomenon.

Objectivists view knowledge as a transmittable entity; it can be transmitted from the expert to the novice, from the teacher to the students (Nurmi & Jaakkola 2005). In this perspective, learners are viewed as containers ready to be filled with knowledge, and knowledge is considered to be external to the individual. The extent to which the container has been filled with knowledge defines the success of any teaching activity. Similarly, learning is understood as students' attempt to absorb knowledge. Thus, within this framework, students' learning is primarily attributed to the teacher. The students assume little or no role at all in their learning, just like the role of the container mentioned above.

Constructivism, however, offers a completely different view of what constitutes knowledge and how people come to possess such knowledge and understanding; that is, how they learn. Constructivism does not view knowledge as being external to the individual (Jones & Brader-Araje 2002), as was commonly entertained by learning theories such as behaviourism. Nor does it regard knowledge as some sort of conveyable, transmittable, entity. Rather, it postulates that knowledge is constructed by the learner, which requires an active process on the part of the learner. Wheatley (1991) writes:

> Ideas and thoughts cannot be communicated in the sense that meaning is packaged into words and "sent" to another who unpacks the meaning from the sentences. That is, as much as we

would like to, we cannot put ideas in students' heads, they will and must construct their own meanings. Our attempts at communication do not result in conveying meaning but rather our expressions *evoke* meaning in another, different meanings for each person (p. 10 – emphasis in the original).

Amongst the many versions of constructivism, there are two dominant theories that will be discussed here - cognitive constructivism proposed by Piaget and sociocultural constructivism pioneered by Vygotsky - because they are central to the present study (i.e. learning across different learning environments).

2.1.1.1 Cognitive Constructivism

One of the major tenets of the cognitive constructivism is that "meaning is constructed by the cognitive apparatus of the learner" (Resnick 1983 cited in Saunders 1992 p. 136). In Piaget's view, learners attempt to "make sense of the surrounding environment" (Levy 1998 p. 87) and, in doing so, they "respond to their sensory experiences by building or constructing in their minds, schemas or cognitive structures which constitute the meaning and understanding of their world" (Saunders 1992 p. 136).

Within this perspective, learning can be conceived of as an *individual* endeavour to internally construct meaning out of the external world. Cognitive constructivism assumes that learners are not empty containers, but that they bring existing schemas into the classroom. These schemas are critical to the process of meaning construction, in that learners construct new meanings based on their current schemas or knowledge. Since individual learners may bring different existing schemas to the classroom, their subsequent interpretation of the reality may differ from one learner to the other. In other words, whilst we share the same 'objective' reality, so this argument goes, the meaning of such a reality must be constructed by each individual learner.

Having said that, such knowledge appears to be relatively subjective in nature, as different learners may come up with different interpretations of the same reality (Blyth 1997). Since learners bring with them different existing schemas, "these mental constructions are often not in accord with those of the

community of scientists or those given in textbooks and as such are described variously as misconceptions" (Viennot 1979; White & Tisher 1986 in Saunders 1992 p. 136). Thus, although learners could end up with various interpretations of reality, it is a fallacy to assume that all meanings constructed by learners can be regarded as knowledge. In order for meaning constructions to be regarded as knowledge, they must be consistent with what has been established in the field. And, one of the most important roles played by the teacher is to ensure that the learners have constructed meaning as expected (i.e. in agreement with what has been established in the field). This can be done, for example, by asking probing questions, challenging students' current ideas or beliefs, asking for clarification, providing alternative solutions, etc. In this case, instructional design should enable the students "to interpret, analyze, and predict information" (Gold 2001 p. 41).

Piaget introduced two different, but inter-related processes through which knowledge becomes internalised. These two processes are referred to as 'assimilation' and 'accommodation' (Gleitman 1987). A new phenomenon which is in harmony or in agreement with one's current cognitive structures is readily assimilated into one's cognition. In this case, the existing cognitive structures become even more stable. In contrast, a phenomenon which is not in accord with one's existing schemas results in a so-called 'disequilibration'; that is, a discrepancy between a learner's current schemas and his sensory experience of the world (Cakir 2008). This experience may be surprising, puzzling, and even frustrating for the learner (Saunders 1992), leading him to question the viability of his current understanding, and perhaps experiment with other paradigms in such a way that the new interpretation is more compatible with his sensory experience of the external world.

The above process of trying to adopt different approaches to making sense of the world is referred to as accommodation. Accommodation occurs when a person is not satisfied with his current understanding and interpretation of the world. In Piaget's term, accommodation is the result of 'disequilibration' (Jones & Brader-Araje 2002). Since one's current cognition is no longer in agreement with the external world, changes to one's current cognitive structures are necessary so that they become more compatible with his experience of the

external world. Accommodation can be in the form of either expansion of or revision to one's current schemas or, in a more extreme case, complete replacement of old schemas with new ones (Cakir 2008). Successful accommodation results in the so-called 'equilibrium', that is, "the achievement of new understandings, coherence, and cognitive stability" (Kaufman 2004 p. 304). When a state of equilibrium is achieved, one's cognitive structures (i.e. one's knowledge) become more harmonious and compatible with one's sensory experience of the external world.

In an EFL classroom, disequilibration (leading to cognitive equilibrium) can be illustrated with a hypothetical student's problems with verb tense in English. As our student has previously learned, the <-d>/<-ed> suffix can be attached to the verb to change it to past tense (the learner has already constructed schemas or cognitive structures in his/her mind that adding these suffixes to the verb will result in the past tense). But he/she would produce such a sentence as 'she comed' when doing online quizzes asking him/her to change it to past tense using the pronoun 'she' and the verb 'come'. Clicking on the 'check my answer' button, this student might become surprised to find out that his/her answer is incorrect, becoming even more puzzled and perplexed when the computer advises that the correct sentence should read 'she came', instead of 'she comed'. Put simply, this student is surprised and confused because his/her prediction, based on a current understanding of the verb tense in English, is inaccurate. In this case, this student will therefore experience disequilibration.

When faced with the experience of disequilibration, according to Saunders (1992 p. 137), a learner reacts in one of three ways, depending on the schema activated:

> He can deny the existence of the sensory data, distrust it by claiming it to be invalid, or rationalizing it away. This is called the intact schema option. He can also revise the schema in some way so that the predictions agree with the experience. This is called the cognitive restructuring option… A third option is apathy. Here, the learner simply disengages himself cognitively. He simply does not accept the responsibility to understand but instead maintains the attitude that, "I don't know why and I don't care (why)".

In the above example of the EFL learner doing online quizzes on English verb tense, the learner who adopts the 'intact schema' option would be inclined to believe that the feedback provided by the computer is invalid, or that there may be a problem with the writing of the script of the program, thus leading to the belief that the computer has provided an erroneous response. The student who adopts 'cognitive restructuring' may, however, wonder why the computer does not produce the response as expected. Given the inconsistency between his/her current cognitive structures and his/her sensory experiences of the external world (i.e. the observation of the computer feedback), he/she may later consult the grammar book, visit online references, or discuss the problem with the teacher or classmates and, at some point, may come to realise that English verbs can either be regular (where the <-d>/<-ed> rules apply) or irregular (where these rules do not apply). Having discovered this principle, the learner subsequently modifies existing schemas concerning the verb tense in English. It is during this process that "meaningful learning occurs" (Saunders 1992 p. 137). As for the learner who adopts the 'apathy' option, nothing is really changed as a result of the disequilibration. In other words, disequilibration does not make any difference to those who are indifferent to any potential discrepancy between their sensory experiences and their cognitive structures.

The above example clearly shows that changes in or modifications of the learner's existing schemas or cognitive structures can only be made by the learner himself. The teacher may teach or impose a new concept, but unless the learner adopts the 'cognitive restructuring' option in response to disequilibration, effective learning will not occur. Thus, one of the important roles of the teacher within this perspective is to provide the learner with the experience of disequilibration, and also to encourage the adoption of the 'cognitive restructuring' option. This can be done, for example, by critically challenging the learner's current understanding and beliefs through discussion and problem-solving activities that encourage the learner to question his/her current views and, hopefully, consider other alternatives. This role is particularly important given the fact that, as previous studies have suggested, changing or modifying the learner's

current cognitive structures is not an easy task. This is simply because, in many cases, students tend to keep their beliefs tenaciously.

This principle of learning either through assimilation or accommodation holds for both the online and face-to-face classroom. In a face-to-face classroom, for example, assimilation can occur when students are involved in the group or class discussion, in which case students listen to others' ideas and viewpoints, including those from the teachers on a given topic. Obviously, during this process, there are ideas and viewpoints which are not contradictory with one's current understanding; but there are also those which may challenge one's existing knowledge. Ideas which are in harmony with one's existing cognitive structures would subsequently enable assimilation, while those which are not may necessitate accommodation.

Assimilation and accommodation can also take place in an online learning environment through the use of both synchronous and asynchronous communication. When a student is involved in a forum or chat room discussion, for example, various viewpoints on a topic could be expressed by others, including the teacher. In this case, a student can evaluate his/her existing knowledge against what is expressed by others. This experience of exchanging ideas with others online is a good opportunity to promote disequilibrium, for different ideas and viewpoints may potentially be expressed by participants. It is through this process that assimilation and accommodation may take place. However, it is worth emphasizing that, as far as cognitive constructivism is concerned, learning can also take place through students' interaction with course content (i.e. reading course materials from online sources). While reading these materials, students' prior knowledge may either be challenged or confirmed.

Thus, "the construction of meaning is a psychologically active process which requires the expenditure of mental effort" (Saunders 1992 p. 137). Individuals constantly check and verify the accordance and viability of their existing schemas or cognitive structures with respect to new experiences and make modifications to their existing schemas to facilitate learning (Jones & Brader-Araje 2002).

Some critics argue that cognitive constructivism ignores the importance of social context in learning. I would, however, suggest that such a conception of cognitive constructivism is not entirely accurate. Although learning is conceived of as an individual, rather than a social, process (Levy 1998), cognitive constructivism also recognises the role of social interaction in the individual's meaning making process. The fact that Piaget recognises the role of social interaction in promoting disequilibration, for example, suggests that social contexts are considered relevant in Piaget's view. In this respect, Schcolnik, Kol and Abarbanel (2006) correctly observe that "although Piaget did not reject the role of social interaction, his main purpose was to shed light on the development of cognitive structures in learners" (p. 13). In other words, in Piaget's view, the importance of social interaction is seen in the context of providing opportunities for disequilibration, rather than for meaning constructions.

Cognitive constructivism has also been criticised for the fact that "explicit teaching and instruction are still very much part of such approaches" (Ruschoff & Ritter 2001 p. 222). However, at certain times, direct instruction is still necessary and, therefore, it could not be completely avoided (Kaufman 2004). For example, there are certain concepts, particularly those that are very abstract in nature, which mean that, students may not have sufficient schemas to construct meaning effectively, and so these concepts may need to be taught by the teacher. In this case, the primary objective of teaching should be to provide scaffolding[6], rather than to transmit a concept to students' minds, so that students could construct meaning themselves under the auspices of the teacher. Indeed, it is very difficult, if not impossible, to imagine a classroom without the teacher being involved, to some extent, in 'teaching' the lesson. Of course, I am not suggesting that the teacher should dominate the classroom.

Interestingly, many critics of cognitive constructivism seem to tenaciously cling, either explicitly or implicitly, to the claim that "if the teacher teaches the lesson, then the students will not construct meaning". I would suggest that such a conception of constructivist classroom is not entirely accurate. Whilst student-

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[6] Scaffolding is defined as "providing assistance to students on an as-needed basis with fading of assistance as their competence increases"(Pressley *et al.* 1996 p. 138)

centred learning should be promoted and a teacher's talking time should be kept to a minimum to encourage group discussion and social interaction, I cannot see how explicit teaching prevents students from constructing meaning. In fact, even in a traditional teacher-centred classroom in which learners are generally less involved in the learning process, knowledge is actually not transferred by the teacher; rather, it is the learners that "construct their own understanding" (Gadanidis 1994 p. 93). Again, I am not suggesting a classroom in which the learners just sit quietly, listen to the teacher's explanation, then construct their own meaning – and call this a constructivist classroom. The point that I make is that explicit teaching can sometimes be very useful in helping learners construct meaning.

Of course, as mentioned above, a student-centred approach encouraging interaction among the students and between students and teacher should be encouraged simply because meanings are most effectively constructed through discussion and challenging each other's ideas, rather than through passive lectures. Saunders (1992 p. 140) argues similarly that "small-group work tends to stimulate a higher level of cognitive activity among a larger number of students than does listening to lectures and thus provides expanded opportunities for cognitive restructuring". In other words, getting the students to actively participate in classroom activities through small group strategies is crucial for meaning construction.

Echoing results from previous studies, Perkins (1999) notes that "active engagement in learning may lead to better retention, understanding, and active use of knowledge." In this case, "classrooms are places where individuals are actively engaged with others in attempting to understand and interpret phenomena for themselves, and where social interaction in groups is seen to provide the stimulus of differing perspectives on which individuals can reflect" (Driver *et al*. 1994 p. 7). Thus, a small group strategy plays an important role in providing the students with opportunities to discuss issues and challenge each other views and beliefs, thus paving the way for disequilibration and for the construction of new meanings.

Nevertheless, knowledge construction is very much affected by the characteristics of the knowledge being constructed. Knowledge is accordingly

classified into different types based on its construction methods, thus recognising different types of knowledge such as 'prelogical, concrete, or formal' (Scheurman 1998 p. 8). One of the implications of this classification is that instructional design should be sensitive to the characteristics of the subject matter. For example, knowledge construction for language courses may be different from that for sciences and vice versa. In this respect, Schcolnik, Kol and Abarbanel (2006) argue:

> In content-area courses, students construct knowledge related to the specific content area studied. In language courses, the situation is different: students construct two kinds of knowledge simultaneously – content knowledge and knowledge of the language. This is particularly true in content-based EFL courses in which the teaching materials are organised by content topic. Conscious reflection on the language may help learners construct knowledge of the language (p. 14).

To sum up the argument thus far, in cognitive constructivism meaning is not transmitted from teacher to learner. Rather, it is the learners themselves who actively construct their own meaning (i.e. knowledge and understanding) through their subjective experiences of the objective external world. Cognitive constructivism regards meaning construction as an individual, rather than a social, endeavour. Whilst it recognises the importance of social interaction, it views its importance in the context of providing the experience of equilibration.

Additionally, learners' current cognitive structures are regarded as playing a crucial role in this meaning-making process as they impact on the meaning created. The fact that different learners may construct different meanings out of a similar phenomenon may be attributed to the different schemas or cognitive structures that they possess. Within a cognitive constructivist framework, learning occurs either through 'assimilation' or through 'accommodation' of new information in response to so-called disequilibration. However, the experience of disequilibration on its own does not necessarily result in meaningful learning. Rather, it is the kind of cognitive response to the experience that matters most. Of the three different cognitive options, cognitive restructuring is the most effective

for students' learning simply because it promotes critical thinking, in-depth analyses and self-evaluation on the part of the learner, thus paving the way for a deeper and genuine understanding of the 'new' reality.

Cognitive constructivism's perspectives on how learning actually takes place are relevant not only for the face-to-face classroom, but also for online learning. In a face-to-face classroom individual students construct meaning based on their observation and interpretation of the teacher's explanation of a topic and on their readings of course materials. Additionally, such activities as small group and class discussion are also helpful in assisting students construct meaning because when students exchange ideas with others, particularly in a small group, differing perspectives and viewpoints on a topic may be expressed. These, in turn, force them to re-evaluate their prior knowledge on that topic in light of new perspectives. In this case, from the standpoint of cognitive constructivism, group discussion is a good strategy to promote disequilibrium. Students' experience with various learning tasks in the class may also help them construct meaning either through assimilation or accommodation.

A similar process of meaning construction also occurs in an online environment. In an online environment, however, students rely heavily on both synchronous and asynchronous communication. One example can be seen in the use of forums where students post questions and comments and others respond to these questions. Again, during this process, differing views may be expressed by others, forcing the participants to consider other alternatives in addition to their own perspectives. A similar process may also occur during chat sessions. In other words, synchronous and asynchronous communication focussing on a given topic may have the potential to promote disequilibrium, paving the way for meaning construction. Additionally, reading online course materials and other relevant sources on the net, or simply doing online quizzes, for example, often challenge students' prior knowledge. As illustrated by a hypothetical EFL learner's experience with the verb tense in English mentioned earlier, problems presented in online quizzes may encourage students to re-evaluate their current cognitive structures. Thus, from the standpoint of cognitive constructivism, instructional design for both face-to-face and online learning should allow the students to

experience various perspectives so that they can re-examine the viability of their prior knowledge against as many new alternatives as possible. Getting students to discuss and share ideas with others in a small group is a good strategy to help students construct meaning in addition to individual work such as reading course materials or doing quizzes. However, while social interaction experienced during group work is instrumental to learning, it is not a pre-requisite for learning as far as cognitive constructivism is concerned. By contrast, sociocultural constructivism views social interaction as a necessary condition for learning.

2.1.1.2 Sociocultural Constructivism

Like Piaget, Vygotsky also argues that knowledge is not simply transferred; rather, it is constructed by learners for learning is an active–process. However, unlike Piaget, whose focus of meaning construction (i.e. learning) is on an individual level, Vygotsky suggests that, "learning and understanding are inherently social and cultural activities" (Cobb 1996 p. 185). Vygotsky maintains that learning occurs during social interaction with others. In this case, knowledge is regarded as the result of the learners' interaction with the social environment (Brown 2005). In other words, "We learn not as isolated individuals, but as active members of society (Yang & Wilson 2006 p. 365).

Since learning is inherently social, so is the knowledge that results from such social interaction. Our current understanding is not just the result of our own effort to understand our environment: rather, it is the result of meanings constructed through social interaction with other people. Thus, any meaning that we construct is basically a shared meaning that we have successfully internalised as a direct result of our participation in social interaction in a particular context at a particular time.

Central to the sociocultural constructivist theory is the postulation that learning occurs through dialogue and is mediated by sociocultural or psychological tools (Vygotsky 1981). In this respect, sociocultural tools serve to "mediate social and individual functioning and connect the external and the internal, the social and the individual" (Wertsch & Stone, 1985, as cited in John-Steiner & Mahn 1996 p. 192). In other words, sociocultural tools bridge the gap

between meaning making processes that occur at a social level and those that occur at an individual level, thus connecting individual and social processes, as well as the gap between a learner's mind and the external world, thus connecting a learner's mind and the external world.

Sociocultural or psychological tools include, but are not limited to, "language; various systems of counting; mnemonic techniques; algebraic symbol systems; works of art; writing; schemes; diagrams; maps and mechanical drawings; all sorts of conventional signs and so on" (Vygotsky 1981 p. 137). John-Steiner and Mahn (1996 p. 193) included such tools as "the paint brush, the computer, calendars, and symbol systems". Again, these "psychological tools are not invented by the individual in isolation. They are products of sociocultural evolution to which individuals have access by being actively engaged in the practices of their communities" (John-Steiner & Mahn 1996 p. 193). In other words, a community communally creates their sociocultural tools, makes use of these tools in constructing meaning, and hands them down to the next generation for a similar purpose. Only by participating in the social interaction can individual members of a community have access to these tools themselves.

Computer technology is perhaps one of the greatest sociocultural tools that has ever been invented. Whilst humans invented the technology, it is clear that the technology itself has, in turn, changed the way we live and even think. In other words, whilst humans have invented this miraculous tool in their attempt to deal with the environment, it also has the potential to fundamentally affect our lives. Since computer technology can be considered as one example of a sociocultural tool (John-Steiner & Mahn 1996), we can therefore argue that socially-constructed meaning, or learning, can be mediated by the technology through its use in the social interaction. In this case, the link between sociocultural constructivist pedagogy, which regards social interaction as a pre-requisite for learning and technology, which provides a means for interaction, becomes immediately apparent.

The role of the sociocultural tools, particularly the language, in meaning construction has always been accentuated by Vygotsky and his adherents. In particular, since the language serves to mediate meaning construction through its

use in social interaction, 'learning', by definition, involves people 'interacting' using the language. It is worth emphasising further that language not only serves to mediate meaning construction, but that its use in social interaction is on its own regarded as learning. In other words, use of sociocultural tools, especially language, in social interaction serves as both the means to learning and constitutes learning itself.

In Vygotsky's view, "all higher mental functions are social in origin and are embedded in the context of the sociocultural setting" (Jones & Brader-Araje 2002 no page number). To gain access to the 'communally constructed meaning', community members should be directly involved in the use of these sociocultural tools through their social interactions. It is by actively participating in social interactions that the communally constructed meaning can be internalised by each individual, thus becoming one's own knowledge. Although it should be clear that sociocultural constructivism generally focuses its attention on knowledge co-construction at a social level, it also recognises "the interdependence of social and individual processes in the construction of knowledge" (John-Steiner & Mahn 1996 p. 191). Put differently, although meaning is constructed within a social context, in the end, internalisation of this communally constructed meaning becomes a matter of individual endeavour.

Nevertheless, just as a linguist constructs his/her meaning (i.e. knowledge of linguistics) by actively interacting with people or materials related to linguistics (context) using sociocultural tools (i.e. language, symbols, shared tradition, practices, etc), by participating in and interacting with this context, a linguist gradually comes to internalise the meaning that is communally constructed. Since meaning making is context-specific, the meaning constructed by a linguist may not necessarily be identical to that constructed by a biologist, for example. As far as sociocultural constructivism is concerned, meaning is thus subjective in nature.

In an educational context, the postulation that learning is social in nature and that social interaction is a precondition for learning has a significant implication on instructional design, regardless of modes of instruction. In particular, since social interaction, which involves use of language for communication, is regarded as both a means to an end (an instrument) and an end

in itself (a goal), any instructional design should enable the students to interact with one another, including with the teacher, in their learning. This is because, as mentioned earlier, meaning is socially constructed and only when students are involved directly in the social interaction with other members of the classroom community can they have access to this socially constructed meaning.

In a conventional classroom, students interact face-to-face with one another through such activities as task-based small group discussion. When trying to complete a task in a small group, each student brings different perspectives and understanding of the task; yet, in the end, they need to come to an agreement regarding the task at hand. In doing this, they will challenge one another's beliefs, propose different views and alternatives, or simply synthesise the group's ideas to construct new meanings. Through negotiations and the exchange of ideas, and through an exploration of a wide array of differing perspectives, each member of the group may finally come to a shared understanding of the task.

The group's ideas may be further discussed with the whole class. In this case, the original group's ideas may be revised in light of another group's perspectives, or may simply be re-inforced during class discussion. Through social interactions and negotiations with other members of the classroom community (including the teacher), the whole class may, in the end, arrive at a shared understanding of the task. In this case, we say that meaning has successfully been constructed by members of the classroom community through their social interaction (John-Steiner & Mahn 1996; Scheurman 1998).

A similar process of meaning construction can also occur in an online environment. In this environment, however, students interact with one another using both synchronous and asynchronous communication. With synchronous communication such as chatrooms, students can work in a small group to discuss a task. As is the case with face-to-face discussion, students may bring different perspectives in an online discussion, but through the process of negotiation and an online exchange of ideas, group members may finally arrive at a shared understanding – a process similar to that in a face-to-face classroom. Perhaps the main difference between an online and a traditional class in how meaning is

constructed lies in the way classroom community members communicate and interact.

One advantage of an online environment over a face-to-face classroom environment is that members of a classroom community can actually interact with one another anytime, anywhere (Hew & Cheung 2003). Issues or questions posted by one member of the classroom community on the bulletin boards are responded to by others, and such responses may, in turn, create a thread of discussion. This provides an even richer opportunity for all group members to interact with one another in their attempt to construct meaning. Thus, from the standpoint of sociocultural constructivism, both synchronous and asynchronous communication can be used as a medium to socially construct meaning. Due to the potential of the Web in promoting social interactions between the teacher and the students, and amongst the students, many believe that an online environment is particularly suitable for constructivist pedagogy where social interaction is central. Felix (2002 p. 2) considers "[t]he web as a vehicle for constructivist approaches in language learning" and this contention becomes immediately apparent when we consider the potential of both synchronous and asynchronous communication in promoting social interaction.

Thus, central to sociocultural constructivism is the postulation that learning is social in nature and that social interaction is both a means to learning and learning in itself. While social interaction serves as the pre-requisite for learning from the standpoint of sociocultural constructivism, it is particularly important for distance education which the students and teacher do not normally meet face-to-face. Lack of social interaction among the students and between the students and the teacher may result in students feeling alienation in a technology-enhanced learning environment which can, in turn, lead to the decision to drop out. In this case, course design that is based on the principles of sociocultural constructivism may help reduce this feeling of alienation. Drawing on the results of previous studies, Ariza and Hancock (2003) have noted the significance and importance of constructivist theory in the design of distance learning education.

2.1.1.2.1 The Zone of Proximal Development

In addition to accentuating the importance of social interaction in meaning construction, Vygotsky introduced the influential notion of the *zone of proximal development* (hereafter referred to as ZPD), defined as "the distance between the actual developmental level as determined through independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky 1978 p. 86).

Through interaction and collaboration with more knowledgeable individuals, learners can complete tasks or achieve an understanding that is beyond their capabilities or understanding (Levy 1998). In other words, learners would learn more than what they would do on their own if they interact and work with others, particularly with those who are more competent than themselves. However, whereas less capable learners benefit from social interaction with more capable learners, more capable learners can also gain benefit from this interaction. As Nyikos and Hashimoto (1997) argue:

> …more capable students can provide peers with new information and ways of thinking so that all parties can create new means of understanding. This mutually beneficial social process can also lead more experienced students to discover missing information, gain new insights through interactions, and develop a qualitatively different way of understanding (p. 507)

From the standpoint of sociocultural constructivism, it is therefore necessary that students work with others, not only because learning is social in nature, but also because only by working with others will they receive the scaffolding[7] which would, in turn, enable them to realise their potential development. In this regard, Gadanidis (1994 p. 94) writes:

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[7] However, whilst more competent learners can provide scaffolding to the less competent ones, it is important to emphasise that providing scaffolding to the less capable learners constitutes one of a teacher's main responsibilities in the classroom. The teacher may provide scaffolding by, for example, providing hints, asking for more elaboration, asking for clarification, getting the students to consider alternative views, etc. Once the learner gains a better understanding and is capable of doing the task on his own, the teacher should gradually withdraw so that the learner can function entirely on his/her own without the assistance of others.

> By working with others, students communicate their ideas… They also listen to, and make sense of, the ideas of other students. Students can internalize the group processes that illustrate the importance of communicating clearly what one knows, knowing from various perspectives, justifying what one knows, and evaluating the quality of what one knows.

Since students share ideas with others, various perspectives could potentially emerge from such interactions. Being exposed to these differing perspectives could help students evaluate the validity of their own perspective in one way or another. In other words, scaffolding is readily available when students are afforded opportunities to work with others.

As mentioned earlier, group work is an ideal strategy to get students to work together because each individual member of the group can contribute to the commonly-shared meaning, while also benefitting from the social interaction that takes place. As far as the ZPD is concerned, groupwork is critical because it provides a rich opportunity for students to provide scaffolding to one another, under the teacher's supervision. Accordingly, students need to be provided with sufficient time when working in groups and, most importantly, the grouping strategy should take into account students' ability levels. Ideally, more able students are mixed with less able ones.

Through the process of scaffolding during social interaction with others in the group discussion, each member of the classroom community could attain their potential development. However, to benefit from this social interaction, each individual learner should contribute equally to the group task, rather than letting one member do the groups' tasks. This is simply because internalisation of the shared constructed knowledge becomes the responsibility of each individual learner. By actively participating in the group or class discussion, learners may evaluate one another's arguments. This process could stimulate critical thinking and help each individual learner arrives at a complex understanding of a given phenomenon.

The notion of the ZPD is relevant not only to face-to-face classroom instruction, but also to online learning. Scaffolding in an online environment can be provided using synchronous communication such as chatrooms. For example,

students can discuss a topic in a small group using chatrooms. During this process, the teacher or more able students help less able students construct meaning by means of various strategies such as elaboration, asking leading questions, giving more examples, providing further explanation, relating a new concept to students' prior knowledge, comparing and contrasting, using analogy, etc. This will, hopefully, enable less able students to arrive at an understanding which would not be possible without the assistance of their classmates or the teacher through online communication. At times, students find it easier to understand their classmates than their teacher, and it is for this reason that involving classmates in providing scaffolding is crucial.

Scaffolding can also be provided using asynchronous communication such as bulletin boards. When posting queries or questions to the bulletin board discussion, other students, generally more able ones, would respond to such queries and, during this process, scaffolding would normally occur quite naturally as more able students try to assist less able ones using strategies mentioned above. Of course, the teacher should always observe this process to ensure that it is on the right track and, when necessary, to assume the role of scaffolding provider him/herself. One advantage of provding scaffolding using asynchronous communication is that it can be done anytime, anywhere. Since time and space is not a constraint, providing scaffolding may be naturally comfortable and gratifying. This is particularly due to the fact that students can read and edit their responses as many times as they like before getting them posted. They are also free to choose which issues/topics they are willing to provide scaffolding to and to whom. In this case, application of the constructivist pedagogy, particularly as far as the ZPD notion is concerned, to online instruction becomes immediately evident.

2.1.1.3 Constructivism in the Classroom

Despite the growing popularity of constructivism in educational sectors, it is a theory about what constitutes knowledge and how people come to possess such knowledge; "it is not a theory about teaching" (Reagan 1999 p. 413). Consequently, "although it might provide a model of knowing and learning that

could be useful for educational purposes, at present the constructivist model is descriptive, not prescriptive" (Airasian & Walsh 1997 p. 62). In other words, whereas constructivist theory postulates a number of important principles about how learning takes place, "it does not translate neatly into a set of pedagogical practices" (Blyth 1997 p. 51).

Airasian and Walsh (1997 p. 65) note that whilst some methods regarding the implementation of constructivist pedagogy have been suggested, "it is not clear how such methods relate to learning in different content areas or whether they will be equally successful across all subject areas...Implementing constructivism calls for a "learn as you go" approach for both students and teachers; it involves many decisions and much trial and error". Thus, since constructivist theory does not come with practical guidelines ready for classroom implementation, teachers can creatively design their own instruction that reflects principles of the constructivist theory.

In my view, any instructional design should, to some extent, contain some elements of constructivism in it. I suggest that even in a teacher-centred classroom, where students are less active, some elements of constructivism may be present. For example, while listening to the lecture, learners may try to make sense of a teacher's explanation through an 'internal' dialogue, in their heads, and thereby constructing their own meaning (this is particularly true as far as cognitive constructivism is concerned). Additionally, when trying to understand a lecture, these learners will also rely on their previous knowledge and use this knowledge to interpret a new phenomenon. Thus, in a sense, some elements of constructivism (i.e. knowledge construction) are present even in a teacher-centred instruction. The question is, therefore, not whether an instructional design can be regraded as constructivism, but to what extent such a design reflects constructivist pedagogy. Thus, constructivist pedagogy is like a continuum; it is not a matter of either constructivism or not constructivism. Airasian and Walsh (1997 p. 65) cogently argue that learners "construct their own knowledge and interpretations no matter what instructional approach is implemented and no matter what name is given to it". Further:

> …from a constructivist point of view, it is a misunderstanding to consider teaching methods such as memorization and rote learning useless, since some matters can and possibly must be learned in a purely mechanical way. One's task is to find the right balance between the activities of constructing and receiving knowledge, given that not all aspects of a subject can or should be taught in the same way or be acquired solely through "hands-on" or student-centered means (p. 65).

In other words, from a constructivist perspective, direct teaching should not be considered irrelevant since, in some cases, it does in fact help students construct meaning.

2.1.1.4 Teachers' Roles in Constructivist Theories

One of the corollaries of the two different, but inter-related, theories of learning concerns teachers' roles in the classroom. With cognitive constructivism, the role of the teacher is down-played. In this case, the most important role of the teacher is to assist the learners in assimilating meaning into their current cognitive structures and to provide them with an experience of disequilibration, as well as to assist them in applying 'cognitive restructuring' when faced with such an experience. In other words, from the cognitive constructivist point of view, a teacher's role is more like that of a facilitator. With Vygotsky's constructivism, however, the teacher is involved directly in the social interaction and meaning-making process among the members of the learning community (Levy 1998). In other words, a teacher participates in the classroom activities and is involved in the negotiation of meaning with the learners. Gass and Varonis (1985 p. 39) define negotiation of meaning as "exchanges in which there is some overt indication that understanding between participants has not been complete and there is a resultant attempt to clarify the non-understanding."

While there is a debate concerning which version of the theory is more appropriate for classroom practices, I suggest that both cognitive and sociocultural constructivism are relevant, and there is no need to make a hard and fast distinction between the two versions of the theory. Boyle (1997 p. 81) argues cogently that Vygotsky's and Piaget's views are either 'challenging' or

'complementing' each other. While the focus of these two theories is somewhat different, combining the two is more advantageous than relying on one version only (Felix 2005). Obviously, there are times when the teacher should leave the students alone to discuss a task among themselves in the group. This is particularly true when students feel intimidated by the presence of the teacher in the group discussion, thus refraining from expressing their ideas freely. In this case, it is probably better for the teacher to assume a facilitator role. There are also times, however, when the teacher should be directly involved in the negotiation of meaning with the students. For example, at times, students may not have an idea of how to approach a task, or may simply require a teacher's assistance to start with. Thus, because a teacher should play a flexible role in the classroom, both cognitive and sociocultural constructivism are relevant for classroom practices.

2.1.1.5 Tenuousness of Constructivism

One of the criticisms of constructivism pedagogy is that it is more time-consuming than conventional teaching practices (Airasian & Walsh 1997; Felix 2005; Perkins 1999; Schcolnik, Kol & Abarbanel 2006). The problem in formal educational institutions is that time allocated for lessons is very limited and, given this constraint, it seems difficult, if not impossible, to apply pure constructivist pedagogy in the classroom without cutting short each activity. This is also problematic since some students need more time to effectively construct their meaning; some students need more scaffolding, etc. At the end of the day, this might create uncertainties among students.

To solve this problem, it is necessary to combine cognitive and sociocultural constructivism principles in the design of the learning activities as suggested above. In this case, learning can be seen as both an individual and a social endeavour. Obviously, there are times when students just sit quietly reading course materials in a course book or on the computer screen and try to make sense of what they are reading individually; alternatively, there are also times when they need to discuss what they have already read with their classmates to complete a task, or simply to practise the skills they have learned. For example, in a grammar class, students can practise asking and answering questions with a partner using

the appropriate tense, following on with individual tasks outside the class, such as reading course materials or doing grammar excercises. Because individual activities can be conducted outside the class, more time will be available for group discussion and exhange of ideas in the classroom.

Put simply, well-designed classroom activities combining the principals of both sociocultural and cognitive constructivism not only help students construct meaning, but also save class time.

2.1.1.6 Constructivism and Second Language Acquisition Theory

As discussed previously, constructivist theory, particularly sociocultural constructivism, underscores the importance of social interaction in learning. While this postulation applies to learning in general, its application may be more clearly observed in language learning (Lantolf & Thorne 2007) where social interaction and learning are inseparable. Instinct tells us that we acquire our first language by interacting with the people around us, by participating in the negotiation of meaning with others. It is by being involved in these social activities that we gradually become a fluent speaker of our mother tongue. Since constructivism regards social interaction as a key aspect of learning, including language learning, its relevance and compatibility to language learning theory, particularly that of the Second Language Acquisition (SLA) theory, becomes immediately apparent.

However, before delving into the Second Language Acquisition theory further, it is important to note that, although the phrase "Second Language Acquisition theory" is ubiquitous in the literature, such a phrase could potentially be bewildering. This is simply because the Second Language Acquisition theory is, strictly speaking, not actually a theory as its name suggests; instead, it is a collection of a number of different, but inter-related, theories all of which attempt to provide an explanation as to how and under what conditions language acquisition takes place.

According to Larsen-Freeman and Long (1991 p. 227), "at least forty 'theories' of SLA have been proposed" in the field. Among the most influential second language acquisition theories relevant to the present study are cognitive, social, and interactionist theories. Each of these theories will be briefly discussed

immediately below where the compatibility between these particular SLA theories and constructivism will be demonstrated in light of the objective of the study.

To begin with, cognitive second language acquisition theory focuses its attention on the role of cognition in language learning. It postulates that one's language knowledge is the result of the accumulation of knowledge (i.e. 'cognition') that one acquires gradually through practice, learning, and experience (Posner & Snyder, 1975). Language learners automatise this knowledge of language by 'organising' and 'restructuring' new knowledge in light of old knowledge acquired (McLaughlin 1987). Thus, in a sense, cognitive second language acquisition is a kin to cognitive constructivism discussed earlier in this thesis (see section §2.1.1.1 for further discussion). The new knowledge is then 'structured' and 'organised' in such away that no discrepancies exist between new and prior language knowledge. As this knowledge increases in amount, its production becomes spontaneous and automatic (Posner & Snyder, 1975).

Additionally, as far as cognitive second language acquisition theory is concerned, social context is considered to be of lesser importance since it has little impact on language acquisition (Larsen-Freeman 2007). In other words, from the standpoint of cognitive second language acquisition, language acquisition can take place regardless of the social context. Since the role of cognition is strongly accentuated, language is viewed as a 'mental', rather than 'social construct' (Larsen-Freeman 2007). Because language is not viewed as a social construct, the emphasis of the theory is not on how the language is used in a social context to promote language acquisition. Rather, it is how the knowledge is acquired, involving 'mental' process, regardless of the context. An obvious application of the cognitive second language acquisition theory can be seen in how EFL learners acquire the grammatical knowledge of English by doing online quizzes. In this case, understanding the complexity of the grammar problems tested in the quizzes involves a great deal of mental processes from the standpoint of the learners.

In comparison, social second language acquisition theory postulates that social context plays a pivotal role in language acquisition simply because language acquisition hinges on a social context. Since the role of social context is central to social second language acquisition theory, language is regarded as a

'social construct' (Larsen-Freeman 2007). Thus, the focus of the theory is on how the language is used in a social context that facilitates language acquisition. In other words, the emphasis of the social second language acquisition theory is not on cognition, but on the social context and interaction where the language is used. Thus, the theory implies that different social context may result in different language acquisition and that a certain social context may be more appropriate for the acquisition of a certain language skill than the other. Simply put, as far as social second language acquisition theory is concerned, the social context defines the sort of acquisition that may or may not take place.

Another prevailing second language acquisition theory is referred to as interaction hypothesis (Long 1981). The theory postulates that not only is interaction necessary for practicing language skills learned, but interaction in itself constitutes learning. Thus, the interaction hypothesis is compatible with Vygotsky's sociocultural constructivism which postulates that social interaction is considered to be both instrumental to learning and learning in itself (see section § 2.1.1.2 for further discussion).

While Interactionist Second Language Acquisition Theory acknowledges the role of comprehensible input in language acquisition (Krashen 1985), it emphasizes that comprehensible input in itself is not enough to account for the complexity of language acquisition processes. The proponents of interactionist hypothesis (e.g. Hatch 1978) are particularly critical of Krashen's idea that the knowledge of structure is acquired in advance before the learner can speak the language using the acquired structure. Hatch argues that it is entirely possible that the knowledge of structure comes at a later time during the acquisition process. In fact, so this argument goes, children are capable of communicating with one another before understanding the structure of the language they speak.

Interactionist Second Language Acquisition theory posits that interaction is critical to second language acquisition because it promotes "comprehensible input" (Krashen 1985; Long 1981). Krashen originally proposed that only input received by the learners is relevant in language acquisition. This position was later challenged by Swain (1995) who argues that 'output' from the learners, that is, a learner's linguistic production, is also critical in language acquisition. Thus, as far

as the interactionist second language acquisition theory is concerned, the primary goal of any social interaction in language learning is to facilitate the emergence of "comprehensible input" and to provide the learners with the opportunity to experiment with their "comprehensible output" during social interaction with others (Nunan, 1993; Swain 1995).

Getting the students to interact with one another to negotiate meaning in an authentic situation is crucial for language learning from the standpoint of both constructivism and the SLA theory. Even when it comes to teaching the grammatical aspects of the language, for example the verb tense, it is still possible to get the students to interact with one another while, at the same time, learning how to use the appropriate verb form. For example, by getting the students to directly use verb forms in conversation with their classmates to discuss real life topics (for example, what students do at a particular time) the teacher can provide them with feedback. Reagan (1999 p. 420), with regard to the teaching of the verb form in Spanish, for example, suggests that:

> ...telling students about the difference between the verbs *ser* and *estar* in Spanish might well be less useful than simply having them employ the verbs and gradually come to know, in part as a result of teacher correction, when each is appropriate (though in fact, it is important to note, constructivist pedagogy would not actually rule out explicit grammatical instruction if it was useful in helping students to construct their own understandings of the features of the target language.

Additionally, as far as second language acquisition theory is concerned, it is through social interaction with others that students receive so-called 'negative evidence', that is, the ungrammatical forms that they may produce while interacting with others, either through direct or indirect feedback from interlocutors (Long, 1996), be they peers or the teacher. Negative evidence puts an emphasis on the form and leads the learner to modify their 'output' in accordance with the feedback received. This process, in turn, leads to language acquisition. Thus, from the standpoint of SLA theory, social interaction is important because students can be exposed to comprehensible input and comprehensible output, as well as to negative evidence, all of which are critical to language acquisition. In

this regard, the notion of negative evidence within the SLA framework may be comparable to that of the disequilibrium from the cognitive constructivism perspective, whereas the notion of comprehensible input and comprehensible output may be analogous to that of the ZPD from the perspective of sociocultural constructivism.

With regard to constructivism in language learning, Ruschoff and Ritter (2001 p. 223) argue "...production and knowledge construction are needed for the successful outcome of any language curriculum". Therefore, language learning activities should encourage students to interact with one another and to negotiate meaning using the target language. One important principle for designing a task is that it should be authentic, that is, it should be something that the students will most likely experience when communicating in a real situation. Authentic tasks will most likely result in a more "meaningful interaction", thus providing the best opportunities for the students to experiment with their comprehensible output through their social interaction with the others (Nunan, 1993).

When students interact with one another online using the target language, they will likely be exposed to comprehensible input – for example, by observing the use of certain language expressions and grammatical forms which may be slightly above their current understanding[8] (Aitsiselmi 1999). This is particularly true when students are interacting with native speakers or near-native interlocutors where they are exposed to new expressions used in an authentic situation for an authentic purpose. It is by interacting with others in the process of negotiation of meaning, by observing and internalising these inputs, that language acquisition can subsequently take place in an online learning environment. Additionally, online discussion using both synchronous and asynchronous communication also enables the students to experiment with their language to negotiate meaning for a real life purpose, thus promoting 'comprehensible output' (Swain 1995). It also enables the students to experience 'negative evidence'.

To sum up the argument thus far, both constructivism and second language acquisition theory posit that social interaction is vital to language learning,

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[8] Of course, one can also argue that the students may also be exposed to ill-formed construction during this interaction.

eventhough they have different sets of assumptions regarding its importance. At the very practical level, and simply because social interaction is considered critical to language learning, both constructivism and second language acquisition theory advocate instructional design that promotes social interaction among the learners and between the learners and the teacher.

2.1.1.7 Summary

This section explored two different, but inter-related, learning theories – cognitive constructivism and sociocultural constructivism – as they are applied to both face-to-face and online learning environments. Whereas both posit that knowledge is constructed by the learners, rather than being transmitted by the teacher to the learner's mind, and that learning entails an active rather than a passive process, they differ in their views of the role of social interaction in learning.

Cognitive constructivism focuses on individual knowledge construction, but it also acknowledges the importance of social interaction. It is crucial because social interaction could provide the students with the opportunity to experience 'disequilibrium' leading to 'equilibrium', either through assimilation or modification of one's current cognitive structures. In comparison, sociocultural constructivism emphasizes that social interaction is the necessary precondition for learning, primarily because 'learning is social in nature' and because it enables the students to work within their ZPD through so-called scaffolding. I suggested that both theories should be taken into account when designing learning activities, regardless of modes of instruction, simply because each has its own strengths and that the teacher should play a flexible role in the classroom. Additionally, I also suggested that whereas constructivism pedagogy is applicable for conventional face-to-face classroom instruction, it is particularly relevant for online learning environments through the use of both synchronous and asynchronous communication.

Furthermore, it has been argued here that, since social interaction is central to constructivism pedagogy, it is particularly relevant for language learning. In this regard, I have also demonstrated that the major tenets of constructivism are in line with those of the second language acquisition theory. From the standpoint of

the second language acquisition theory, social interaction is critical because it can provide the students with 'comprehensible input', 'comprehensible output', and 'negative evidence'. Because both constructivist and second language acquisition theories underscore the importance of social interaction in language learning, the relevance of these theories in Web-based distance education, which provides different ways of social interaction through synchronous and asynchronous communication, becomes immediately apparent.

2.2 Distance Education

This section provides an account of Web-based distance education across different fields in general, and in language learning in particular, in order to locate the study in the literature. Results of previous studies will be presented and critically analysed. However, before presenting a discussion of Web-based distance education, it is necessary to provide an overview of how traditional distance education – study by correspondence – has evolved into modern distance education, namely Web-based distance education, a comprehensive picture of which can then be presented.

2.2.1 An Overview of Distance Education

Gunawardena and McIsaac, as cited in Tracey and Richey (2005 p. 17) refer to distance education as "educational programs in which students and the instructor are separated by place and often time". Similarly, Moore and Kearsley (1996 p. 2) define distance education as "planned learning that normally occurs in a deferent place from teaching and as a result requires special techniques of course design, special instructional techniques, special methods of communication by electronic and other technology, as well as organizational and administrative arrangements". Put simply, distance education can be understood as an educational method whereby, unlike conventional education, the teacher and the students do not meet face-to-face in a classroom, thus requiring use of communication media to bridge the communication between the teacher and the students and among the students.

Distance education was developed in order to increase the availability of everyone's learning opportunities (Harting & Erthal 2005). Pioneers of this

educational program recognised that there were barriers to accessing education, primarily due to geographic distances between educational providers and the students. For example, students living in remote areas would find it difficult, if not impossible, to travel great distance to attend conventional education. By the same token, people with other commitments, be it professional or personal, would not be able to come to traditional classrooms owing to their commitments (Hannay 2006). As a result, a large number of people were not fortunate enough to attend conventional education due to the abovementioned constraints. In this case, distance education serves to provide education to community members who would not otherwise be able to have access to education.

The growing popularity of distance education has been attributed to a number of factors. Firstly, distance education does not require students to travel to an educational provider to receive education. Nor is it constrained by timetables, as is generally true for conventional education. Thus, distance education is much more flexible in terms of time and location compared to traditional face-to-face classroom instruction whereby teaching is constrained by timetable and place (Banas & Emory 1998; Wallace 1996). Owing to its flexibility, distance education has gained popularity and is continuing to flourish. In fact, over the past few decades, distance education has proved to be a crucial type of education, particularly where higher education is concerned (Dhanarajan 2001). In the 1980s, around 10 million people throughout the world were taking distance education as reported by The International Council for Distance Education (Kaye 1988). Needless to say, this figure is much higher today.

In addition to its flexibility, the growing popularity of distance education is also attributed to such factors as geographical, demographical, socio-economical and cultural situations, as well as the availability of technology (Zuhairi, Wahyono & Suratinah 2006). Also, a dramatic increase in the world's population over the past few centuries has brought with it 'the need for life-long learning', resulting in a higher demand for education, which then translates into 'increased demand for distance learning' (Garrison 2000).

The following section will discuss how distance education has evolved from the earliest form – education by correspondence – to the advent of modern

distance education employing sophisticated technology, Web-based distance education, as this becomes the primary focus of the present study.

2.2.2 History of Distance Education

Although it may sound like a new phenomenon, distance education can actually be traced back as far as the 1800s (Verduin & Clark 1991). Some people believe that it had even existed as far back as the 1700s (Harting & Erthal 2005). During this period of time, distance education has undergone an evolution in terms of its delivery mechanisms, a process which has resulted from advancements in communication technologies.

Researchers have classified the development of distance education into several different stages. For example, Sumner (2000) recognises three generations of distance education: "correspondence study, multimedia distance education and computer-mediated distance education" (p. 271). Rumble (2001) identifies four different generations into which distance education has evolved historically: (a) the era of correspondence education, (b) the era of radio and TV broadcasting, (c) the era of multimedia development (audio and video), and (d) the era of the development of computers, followed by the advent of the Internet and the World-Wide Web.

Correspondence education, which became the root of all distance learning programs, was the earliest generation of distance learning (Banas & Emory 1998). Correspondence education was first established in England in the early 1880s when reliable postal services had become available (Harting & Erthal 2005). During this early stage, course materials were sent to students and students' responses and assignments were sent back to the teacher, relying heavily on postal services (Harting & Erthal 2005; Sumner 2000). In just a few decades, Britain witnessed a quick growth in distance learning programs heralded by the establishment of corresponding institutions (Tracey & Richey 2005).

During this early stage in the development of distance learning program, the nature of communication between the students and the teacher was one-way communication, relying heavily on print-based documents (Tracey & Richey 2005). Interactivity was not a major concern. Communication among students did

not exist at all and every student studied independently. At this point in time, correspondence education was a very individualistic way of learning, which often results in students feeling alienation (Sumner 2000).

As new technologies emerged, so did the means of delivery used in distance education. As a result, sophisticated technologies were also integrated into distance education (Banas & Emory 1998). For example, radio began to be used in 1928 (Harting & Erthal 2005), but its popularity in distance education reached its peak in the 1940s (Rumble 2001). During this period, print-based materials were also used in conjunction with the radio to support the delivery of course materials.

In 1932, transmitting instructional television began to be used by the University of Iowa to deliver long distance courses before the first introduction of TV at the New York World's Fair in 1939 (Harting & Erthal 2005). Despite lack of success, use of TV and, especially radio, in distance education was increasingly popular after the war (Williams, Nicholas & Gunter 2005). However, TV became popular as a delivery means in distance education in the late 1950s and 1960s (Harting & Erthal 2005; Rumble 2001; Tracey & Richey 2005). At this point in time, however, both TV and radio could only support one-way, asynchronous communication (Sherry 1996). In other words, although new technologies have been integrated into distance education, at this stage of its development, the nature of communication between students and the teacher remained unchanged compared to the era of correspondence study, in that only one-way communication was supported by the media.

Use of satellites for TV broadcasting began in the mid 1970s, paving the way for teleconferencing (Moore & Kearsley 1996). It is during this period that two-way communication began to be supported by new technologies in the history of distance education programs. However, one of the weaknesses of TV broadcasting used in distance education is that the program is broadcasted only at a designated time, thus lacking flexibility. In other words, although two-way communication is afforded by the technology, not all students are able to take advantage of it due to the rigidity of the broadcasting time.

The third generation of distance education was heralded by the advance in multimedia, video and audio technologies (Rumble 2001). The 1980s witnessed a dramatic increase in the use of audio and video recordings, teleconferencing and interactive telecommunication as well as 'multimedia' applications, resulting in the production of audio, images and moving pictures stored in CD-ROM ready to be distributed to students (Moore & Kearsley 1996). These videos and audio technologies are also integrated into TV programs for teleconferencing. However, the problem of flexibility remained as the broadcasting and teleconferencing schedule does not fit everybody's schedule. Consequently, only those whose schedule fits the broadcasting time could participate in these interactive programs. To this end, technology introduces another constraint on distance education.

Perhaps the most significant change in the evolution of media used in distance education occurred in the 1980s, heralded by the advent of personal computers and followed by the introduction of the Internet and the World-Wide Web. It was during this period that distance education programs worldwide experienced a dramatic increase and received wider acceptance as people started to realise its potentials in academic and vocational education.

2.2.3 From Distance Education to Web-based Distance Education

The beginning of the twentieth century has witnessed the introduction of new technologies in distance education (Williams, Nicholas & Gunter 2005). Following the introduction of personal computers, the Internet and, particularly the World-Wide Web, a new type of distance education referred to as Web-based distance education[9] came into existence for the first time.

Web-based distance education was first offered in the 1990s by both private and public universities (Mason 2001), and has ever since continued to flourish all over the world. Unlike conventional distance education, Web-based distance education has a much wider coverage capable of serving wider and dispersed populations. It is even capable of reaching students who may not be able

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[9] Different names have also been used in the literature to refer to Web-based distance education. These include, but are not limited to, online learning, online courses, and e-learning. For the purpose of the present study, these terms will be used interchangeably because they refer to the same type of learning.

to have access to conventional distance education. Additionally, Web-based distance education is also perceived as being more flexible, in that it allows students to learn anytime, anywhere. As a result, many universities and higher education institutions are now embracing Web-based distance education and Web-based courses are now becoming ubiquitous (O'Neal *et al.* 2007).

Whereas distance education was originally offered to adult populations who have various commitments and could not, therefore, attend traditional face-to-face classroom instructions due to their commitments, today, this trend has shifted (Wallace 1996) and many traditional learners are now taking some type of distance learning program. It is now more of a viable option for education. This has resulted in an almost exponential increase in the number of people taking Web-based distance education, making Web-based distance education even more popular than ever. This increase is most prominent at higher education institutions. There are estimates that as many as 710,000 students took distance learning courses in 1998 and, four years later, the number increased to approximately 2.3 million (Grimes 2001 as cited in Joseph, Luis & William 2002), following the introduction of Web-based distance education.

Whilst online courses have now become popular, and while many institutions are now rushing to integrating technology into their curricula (either as a pure online or a hybrid instruction), the effectiveness of such courses relative to conventional education remains the subject of debate (Detwiler 2008; Johnson, Burnett & Rolling 2002; Pucel & Stertz 2005). Whereas some scholars have recommended that this debate be put to an end in the understanding that Web-based distance education is as effective as conventional education (as some of the previous studies have suggested), other researchers argue that such critical evaluation needs to be continued (e.g. Silver & Nickel 2007). This is because previous studies conducted with various subject areas have yielded conflicting and inconsistent findings (see section § 2.2.5 for further discussion).

Following the controversy over the effectiveness of online learning, researchers have examined the potential benefits and drawbacks of this method, suggesting the need to discuss the advantages and disadvantages of Web-based courses.

2.2.4 The Case for Web-based Learning

This section argues that, although Web-based learning suffers from a number of drawbacks as reported by some of the previous studies, some of these identified drawbacks are actually preventable and that the advantage of online learning outnumbers its drawbacks if carefully planned. The following section will examine advantages and disadvantages of Web-based learning as reported in the literature and consider how certain reported drawbacks can possibly be dealt with.

To begin with, there is evidence suggesting that students are more inclined to participate in an online learning environment than in a face-to-face classroom. In other words, online learning environment is less threatening than face-to-face classroom when it comes to students' participation. For example, in the context of online language learning, Freiermuth (2001) reported that learners participated more frequently in online than in face-to-face discussion and that they were more comfortable and less anxious in doing this. The author further argued that social interaction in a face-to-face classroom is generally constrained by 'cultural and social norms', which could be detrimental to students' participation. These barriers to participation, however, seem to be minimal in an online learning environment (Freiermuth 2001). Therefore, students' participation in this learning environment tends to be more evenly distributed compared to that in a conventional classroom (Jarrel 2005; Kern 1995; Warschauer 1996). In other words, an online learning environment appears to have an "equalising effect", as far as student participation is concerned (Jepson 2005). The fact that students find online participation less threatening may be attributed to the perceived decrease in the effect of the abovementioned barriers in this virtual environment.

Additionally, unlike face-to-face classroom discussion where participation is constrained by turn-taking, in an online learning environment, the entire class could simultaneously contribute to the discussion (Freiermuth 2001). Similarly, discussion in a face-to-face classroom is, in most cases, focused on a given topic at a particular time. Even during a small group discussion, for example, students would normally discuss only one particular topic and they have to wait their turn to talk. In online discussion, however, students are able to discuss several topics where every student can voice their opinions simultaneously (Doughty & Long

2003). In a forum, for example, students can flexibly choose which topic of discussion they are interested in joining. They could even participate in a multiple-topic discussion. Thus, at least in this sense, an online learning environment is more democratic in terms of enabling the students to choose a discussion topic for themselves. This may be among the reason why students feel more comfortable in participating in online discussion, as reported above.

Felix (2002) investigated students' perceived benefits of the Web for language learning and reported that the benefits of the Web in this context included "time flexibility, wealth of information, fun, reinforcement of learning, variety, privacy, gaining computer literacy, absence of teacher, ability to repeat exercises, learning with authentic materials and miscellaneous" (p. 5). The first two benefits – time flexibility and wealth of information – were the most commonly reported by the students in Felix's study. Therefore, these two benefits will be discussed further below.

The flexibility of online learning is probably the most frequently cited benefit of online learning in the literature. In fact, many students decided to pursue online learning because of its flexibility (Leasure, Davis & Thievon 2000). Obviously, in an online learning environment, students are able to go online anytime they like – they can access course materials, participate in, or contribute to, the discussion, do online quizzes, etc. whenever they are free. This, in turn, enables those with different timetables to participate or contribute without being disadvantaged by their other commitments outside the classroom. For example, those who work during the day time could go online at night, and vice-versa. In other words, online learning is not constrained by timetables. In comparison, students attending conventional classroom tuition are lacking such a benefit offered by online instruction. In fact, face-to-face instruction has always been criticised because "1) it requires the students and the instructor to be in the same room; 2) instruction can be inconsistent; and 3) lack of flexibility" (Mansour & Mupinga 2007 p. 243). However, just because students enjoy the flexibility of online learning, it does not necessarily mean that it will benefit their learning (Mansour & Mupinga 2007). Therefore, it is important to examine both students'

perceptions of online learning and their actual learning outcomes when attending online mode of instruction.

Additionally, students in Felix's study also reported that they appreciate the fact that the Web provides them with abundant information. Perhaps it is safe enough to assume that the Web is the biggest library in terms of the amount of information provided. Not only does it provide extremely rich information, but it also enables users to find such information in an instant by means of powerful search engines, thus saving a lot of searching time. Additionally, the abundant information on the Web enables students to choose the kind of information that best suits their own level of understanding. In this case, students need to evaluate information on the Web for themselves, rather than relying on the teacher to make a decision for them. This, on its own, is an important learning process, since it involves critical thinking and analysis. It is not surprising, therefore, that the rich information provided by the Web has been identified as one important benefit by students in Felix's study.

Similarly, Yuen (2003 p. 160) reported that technology-mediated communication plays an important role in supporting:

> (a) students' active engagement, (b) participation in groups, (c) discourse among community members and (d) open access to shared information.

In other words, technology plays a pivotal role in promoting participation, social interaction, and information sharing among the students. Thus, technology-enhanced learning appears to provide the learners with a quality learning experience. However, it is a fallacy to assume that providing technology on its own will necessarily result in participation and interaction, thus quality learning[10]. Ultimately, it is a combination of sound pedagogy and appropriate technology that creates this positive learning experience.

Some of the above-mentioned advantages, however, have also been identified as the drawbacks of online learning by other studies. For example, in

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[10] Unfortunately, this perception is not uncommon amongst educators.

the previous section, abundant information available online is considered to be the benefit of online learning. However, other studies suggest quite the opposite. For example, Stapleton (2003) raises his concern about the credibility of materials published on the Net. He argues that, unlike other printed materials which have gone through editorial processes and reviews before they get published, not all materials on the Web have been subjected to such rigorous processes. In other words, there is a plethora of unreliable materials on the Web. For some people, evaluating the credibility of these materials is not an easy task. Consequently, so this argument goes, abundant unreliable materials on the Net could cause considerable problems for students. However, a teacher could always recommend particular sites to his/her students to ensure that these students have access to reliable sources and that they are not overwhelmed by the plethora of information on the Web.

Additionally, whilst online learning tends to promote equal participation among students as reported previously, there are studies which suggest quite the opposite, in that students find face-to-face more convenient than online participation. For example, Wang and Woo (2007) suggest that students find it easier to voice their opinions in a face-to-face classroom than in an online learning environment. However, for some students who have experienced teacher-centred instruction throughout the history of their education, participating in a face-to-face classroom may be inconvenient. Also, in some cultures, making irrelevant points during face-to-face interaction in the presence of classmates and the teacher could be an embarrassing experience. For these students, an online learning environment may prove to be friendlier in the absence of face-to-face communication. In fact, Arbaugh (2000), for example, reported that Web-based courses promote student participation, particularly when employing asynchronous communication technology.

Another argument against online learning is that it could diminish social interaction, thus a perceived sense of community. In particular, the medium was thought of as being 'impersonal', for it was considered as low social presence media (Connolly, Jessup & Valacich 1990). The rationale underlying this assumption is that technology-mediated communication relies heavily on texts

because verbal and non-verbal cues, such as tone, body language, etc., which are all present in face-to-face communication, are absent in a virtual learning environment. Due to the lack of social presence and social context cues associated with computer-mediated communication, some researchers believe that 'true' community in this environment is difficult, if not impossible, to build.

However, some research studies provide strong and consistent evidence concerning the existence of a healthy virtual community in a technology-mediated environment (Haythornthwaite *et al.* 2000; Hiltz & Wellman 1997; Obst, Zinkiewicz & Smith 2002; Rovai 2002a, d; Wang, Sierra & Folger 2003). In this respect, Hill (1996) argues that "it may be that modern society is not suffering from a decline in sense of community, but rather a shift in the ways we acquire it" (p. 436). In other words, the absence of the face-to-face interaction in technology-mediated communication does not necessarily result in the lack of students' perceived sense of community in such an environment. On the contrary, research evidence, as mentioned above, suggests that students taking Web-based courses experience a strong perceived sense of community.

Interestingly, for some people, quality learning is associated with face-to-face interaction between the students and the teacher in a face-to-face classroom (Spooner *et al.* 1999; Terry & Lewer 2003). In other words, according to this view, quality learning will only be achieved if the students and the teacher meet face-to-face. This implies that online learning is of lesser quality. A number of questions, however, arise as a result of the claim that quality learning is defined by *face-to-face* interaction. Firstly, do the students really need to interact face-to-face to be able to learn effectively? Secondly, does it really matter if the interaction is mediated by technology? And, thirdly, is their learning experience sacrificed as a result of technology-mediated communication? These questions are important because the Web also enables the students to interact with both the teacher and their classmates, although this interaction is mediated by technology.

There is increasing agreement that it is not so much whether the interaction is face-to-face or whether it is mediated by technology; it is the fact that students do actually interact that matters most. Students who communicate and discuss ideas online will presumably have a better learning experience than

those who just sit and listen quietly to the teacher in a face-to-face classroom. Put simply, it is not 'being' or 'not being' in a face-to-face classroom *per se* that affects the quality of student learning and learning experiences. It is what they actually do (activities) while learning and how such activities are designed (pedagogy) that matters most. In this respect, Henry and Bozik (as cited in Banas & Emory 1998) correctly argue that whatever delivery means, student learning and learning experiences could be improved if students interact with one another.

Furthermore, it has been argued that, in the EFL context, the Web could potentially create discrepancies between advanced and low proficient learners. This is particularly true when communication and interaction are all conducted in English. In this situation, whilst advanced EFL learners may freely interact with one another, low proficient learners may be struggling to participate. Thus, so this argument goes, despite the potential benefit the Web may offer for advanced EFL learners, students with low proficiency may not be able to take full advantage of it (Liou 1997; Yang & Chen 2007). However, the teacher could actually provide scaffolding to low-proficient learners in such a way that they would participate without having to experience too much pressure; for example, by providing hints or by offering help with editing their messages before getting these messages posted on the forum (please see section § 2.1.1.2.2 – the zone of proximal development – for further discussion on scaffolding). This will also help these students gain self-confidence, knowing that their messages have been proof-read by the teacher. Most importantly, this could help them acquire the target language level since comprehensible input is available from both the teacher and their classmates (please see section § 2.1.1.6 for more discussion on comprehensible input within the framework of second language acquisition theory). Thus, discrepancies in online students' language proficiency can actually be turned into a positive outcome.

Perhaps one of the most frequently reported disadvantages of Web-based courses is high dropout rates. It has been reported that student dropout rates in distance learning are higher than those in traditional face-to-face classrooms (Carr 2000; Owston 2000; Worley 2000). In the US, for example, only about 2% of students could actually complete their study in online courses (Bonk 2002).

Previous studies reported that the major factor contributing to high dropout rates in distance education is students feeling isolated (Banas & Emory 1998), experiencing the feeling of alienation (Wheeler 2002) and experiencing a lack of sense of community (Rovai & Wighting 2005). Vergidis and Panagiotakopoulos (2002), however, reported that problems with course completion in distance education have more to do with "occupational duties and family reasons" (p.8).

Another factor concerns the social aspects of learning by way of distance education. With regard to this, Banas and Emo (1998) argue:

> The lack of face-to-face contact between students or students and faculty worries some educators that distance learning will produce poorly socialized students lacking the tact, social skills, and notions of correct behaviour (p.378)

Trindade, Carmo and Bidarra (2000) endorse the above argument and write, "we must accept the fact that in many fields of knowledge, pure distance learning is not suitable for acquiring all necessary attitudes and skills" (p.6).

Interestingly, whilst some previous studies consistently reported that dropout rates in distance education are significantly higher than those in conventional face-to-face classrooms, a recent study conducted by Frydenberg (2007) yielded a different finding. The researcher reported that while requests for withdrawal before the start of a course were significantly higher in online groups, the difference in the dropout rates after the commencement of the course was not significant, leading the author to conclude that mode of delivery may not be the key factor triggering the decision to drop out.

Felix (2002) listed a number of drawbacks associated with the Web in the context of language learning, based on students' responses. These drawbacks include "lack of speaking practice, unreliability and slowness, absence of teacher, distraction, no interaction with peers, inadequate feedback" (p. 5). These drawbacks are likely to gradually decrease in number however, as advances in communication technologies continue to be made.

Finally, cognitive overload owing to the interface design of the Web may also prove to be another challenge of online learning. With intricate and less user-

friendly Web design, browsing the net could be a frustrating experience, particularly to those who are new to technology. Therefore, Web interface design should always be taken seriously when developing an online program as this may have a major impact on students' experience with online learning.

To sum up, while online learning offers a number of advantages, it also suffers from a number of drawbacks as discussed above. However, most of these drawbacks can actually be properly addressed. With careful planning and taking the above drawbacks into account while designing Web-based learning, there are no doubts that the advantage of online learning outnumbers its drawbacks. Following on from the controversy over the benefits and drawbacks of online learning, researchers have recommended empirical investigations into the effectiveness of online learning.

2.2.5 Rationale for Examining the Effectiveness of Web-Based Courses

Web-based course offerings have been growing extensively over the past decade, especially where higher education is concerned (Kerr 2006; Roach & Lemasters 2006; Rovai & Baker 2005), either as a supplement to the traditional face-to-face classroom teaching or as the primary mode of instruction (Olson & Wisher 2002). As Web-based courses proliferate, it is necessary to ask how effective they are relative to conventional face-to-face classrooms (Allen *et al.* 2004; Issroff & Scanlon 2002; Johnson *et al.* 2005; Sitzmann *et al.* 2006; Warren & Holloman 2005) and to evaluate the effects of such courses on student learning outcomes and learning experience (Bruyn 2004; Johnson, Burnett & Rolling 2002; Olson & Wisher 2002; Shea, Li & Pickett 2006; Smart & Cappel 2006).

Examining the effectiveness of Web-based courses is crucial if we are to justify empirically the merit of this type of education. It is also important because Web-based instruction is, in many aspects, inherently different from classroom instruction; thus, evaluating its effectiveness is critical (O'Neal *et al.* 2007). These authors further write: "with the growth of distance education, it is important for institutions to have accurate, comparative information regarding student learning outcomes in distance education and traditional classes" (p. 36). Unless we have sufficient evidence that Web-based distance education provides the students with

learning experiences equal to or better than in-class instruction, the introduction of Web-based distance education in our educational system should be seriously questioned, simply because it has both ethical and academic implications.

Although there is some evidence indicating the effectiveness of online courses from previous studies, some scholars remain unconvinced simply because there is also evidence that suggests their inferiority, both from the standpoint of students' learning outcomes and their satisfaction with such courses. Reflecting on his scepticism with Web-based courses Bernard *et al.* (2004), for example, write:

> Should educational institutions continue to develop and market Internet learning opportunities without knowing whether they will be as effective as their classroom-based equivalents or, in the worse case, whether they will be effective at all? (p. 383).

Obviously, the issue of effectiveness[11] should become the first priority when examining the merit of online instruction. No matter how convenient or perhaps cheap online learning is, there is no point in embracing it if it proves to be ineffective.

Other researchers have voiced their concerns about the fact that the flexibility and efficiency of online courses tend to become the sole consideration for integrating technology into the curricula, regardless of the characteristics of the subject to be taught and the students learning the subject. In fact, there seems to be a trend in higher education nowadays that everything involving technology is considered up-to-date, sophisticated, and the absence of technology in the classroom is considered as an obsolete practice. In other words, so this argument goes, we seem to unconsciously believe that technology will necessarily do us good, solve our problems, and rarely are we suspicious of it. Whilst online learning is, indeed, more flexible than conventional face-to-face classrooms, we should not assume that it will always solve all problems we have in the classroom.

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[11] The meaning of the term 'effective' is debatable. For the present study, the term has been used to refer to both students' overall performance in the course and their evaluation of the course and mode of delivery. As such, 'effective' here simply means high performance and high level of satisfaction with both the course and the mode of delivery.

In this vein, Johnston (1999, as cited in Hauck & Haezewindt 1999) argues, "on-line learning has appropriated notions such as flexibility and efficiency and skewed their meanings so as to make it appear that on-line learning is the panacea for all our ills" (p. 47).

The debate over the effectiveness of online and in-class tuition is relevant not only in the early stages of its inception, but also as research continues to mount in the field (Bernard *et al.* 2004). This is especially the case due to the fact that research findings concerning the effectiveness of Web-based instructions across different fields have so far yielded conflicting and inconsistent findings (Ali & Elfessi 2004; Jones & Chen 2008), in that some studies have reported on the effectiveness of online courses, while others have suggested the opposite. Clearly, further empirical study is critical (Pucel & Stertz 2005), particularly for subjects that have so far received little or no attention at all.

Whilst Web-based courses might be as effective as, or perhaps more effective than, traditional face-to-face classroom instruction for certain subjects, they may not be as effective with others. Reasons, Valadares and Slavkin (2005) note, from Russel's compilation of the results of previous studies, that the performance of online students may differ from that of those attending traditional face-to-face instruction depending on the course type and outcomes under investigation. In other words, the effectiveness of online courses relative to classroom instruction varies with the subject matter and how it is evaluated.

Therefore, in order to better understand the effectiveness of online courses, research needs to be carried out with a diverse array of subjects. This will help us to better understand what subjects are more effectively taught online and what subjects are better taught face-to-face (Frost and Fukami 1997). Banas and Emory (1998) endorse this view, arguing that "…not all delivery technologies are appropriate for all courses" (p. 372). Unfortunately, much of the previous research tends to focus on science- and business-related subjects, and very few studies have been conducted on foreign language teaching. This is especially true so far as the teaching of 'English Grammar' to EFL students is concerned. Consequently, our understanding of the effectiveness of online courses for the teaching of this subject in an EFL context remains insufficient.

It is also plausible to assess the effectiveness of Web-based distance education in particular circumstances and contexts (e.g. at an institutional level) so that well-informed evaluations of the overall effectiveness of specific courses in particular contexts can be confidently made. In this respect, Bernard *et al.* (2004) argue:

> …not only *whether* DE is a worthwhile alternative but also in which content domains, with which learners, under what pedagogical circumstances... In fact, it is not unreasonable to suggest that such studies might be conducted under "local circumstances" for the primary purpose of making decisions that affect institutional growth on a particular campus (p. 383 – emphasis original by the author).

Although studies on the effectiveness of Web-based instruction have previously been conducted, "…one has to keep in mind that social, cultural and technological contexts vary widely from region to region across the globe" (Trindade, Carmo & Bidarra 2000 p. 13). Therefore, research on Web-based instruction needs to be carried out with populations from different social and cultural backgrounds so that its effectiveness can be better understood with greater reliability.

In conclusion, further research into the effectiveness of Web-based courses is necessary for at least three reasons. Firstly, the number of online courses has been increasing drammatically over the past decade. Many universities across the globe are now rushing to embrace this technology. Examining the effectiveness of such courses is critical, particularly for the purpose of institutional accountability. Secondly, the effectiveness of online courses across different subject areas (for example, foreign language teaching) has not been exhaustively examined. This limits existing understandings of the effectiveness of such courses for this subject area. Thirdly, there is a need to examine the effectiveness of online courses across different cultural and social contexts, including at an institutional level, as mentioned above. Needless to say, what works in a particular context (e.g. institution, country, culture, population, etc.) may not necessarily work in others. Although much research has been conducted outside Indonesia, very little

research, if any, has been conducted with the student population of this country. Thus, the effectiveness of online courses in this context remains an open question.

2.2.6 The Effectiveness of Web-Based Courses

A significant number of research studies have been conducted in the past to examine the effectiveness of online relative to conventional classroom instruction. Whereas most of these studies compared online to face-to-face tuition, others also included hybrid instruction in the design. The following section will present and critically discuss findings of the studies comparing online and face-to-face classroom instruction, followed immediately by studies comparing the three different modes of instruction (face-to-face, online, and hybrid).

2.2.6.1 Research Comparing Online to Face-to-Face Tuition

In an attempt to evaluate the effectiveness of Web-based courses, research has been conducted over the past decade to compare the performance of students as a result of face-to-face and online teaching (Olson & Wisher 2002). In particular, these studies aimed to address questions such as: what does the change in the format of communication mean to students' learning and learning experience? (Allen *et al.* 2004)

Two indicators have commonly been employed to evaluate the effectiveness of Web-based courses: students' learning outcomes as indicated by test scores (normally pre- and post-test scores) and students' satisfaction with such courses (Pucel & Stertz 2005; Unal 2005). However, research into the effectiveness of online courses relative to conventional classroom instruction using the above criteria has yielded conflicting results (Hong, Lai & Holton 2003; Nichols, Shaffer & Shockey 2003), resulting in three different lines of research.

The first line of research suggests that, in terms of students' learning outcomes, online courses are comparable to traditional face-to-face classroom instructions (Ali & Elfessi 2004; Allen *et al.* 2004; Bata-Jones & Avery 2004; Bernard *et al.* 2004; Block *et al.* 2008; Hong, Lai & Holton 2003; Johnson *et al.* 2000; Jones 1999; Leasure, Davis & Thievon 2000; Mascuilli 2004; McLaren 2004; Neuhauser 2002; O'Neal *et al.* 2007; Shelley, Swartz & Cole 2008; Silver &

Nickel 2007; Summers, Waigandt & Whittaker 2005; Topper 2007; Unal 2005; Warren & Holloman 2005). These research studies demonstrate that, when compared to classroom instruction, students learn equally well in an online learning environment and achieve comparable results.

The second line of research indicates that conventional face-to-face classroom instruction is more effective than online tuition in that students attending in-class instruction outperformed those attending online tuition (Pucel & Stertz 2005; Sapp & Simon 2005a; Ury 2004).

Finally, the third line of research suggests that, in terms of students' learning outcomes, online courses are superior to conventional in-class instruction (Burkhardt, Kinnie & Cournoyer 2008; Culbertson & Smith 2003; Detwiler 2008; Johnson, Burnett & Rolling 2002; Liu 2005; Maki & Maki 2000).

Again, these conflicting findings suggest that the effectiveness of Web-based courses relative to traditional face-to-face teaching is by no means conclusive (Kreijns *et al.* 2004). It becomes even more inconclusive with the introduction of a hybrid format, thus necessitating a simultaneous comparison of the three different modes of delivery.

2.2.6.2 Research Comparing Online, Face-to-Face and Hybrid Tuition

Following the debate over the effectiveness of online, relative to traditional face-to-face classroom instruction, some researchers have recommended the adoption of a hybrid method (a mixture of face-to-face and online) in the understanding that the strengths of face-to-face and online can be combined. This method has, however, been criticised as it could potentially combine the weaknesses, rather than the strengths, of these modes of instruction (Abdullat & Terry 2004; Terry & Lewer 2003). Additionally, although hybrid instruction has gained immense popularity in our education, there is a dearth of research examining its effectiveness (e.g. Grandzol 2004; Gutierrez *et al.* 2004). The following section will discuss research studies comparing the effectiveness of hybrid relative to in-class and online tuition.

Various researchers have looked at different modes of delivery, but each has some limitations. For example, Goldberg (1997) compared three different

modes of instruction for both academic performance and student acceptance of Web-based courses for the teaching of a Computer Science Course. Students enrolled in the course were divided into three groups: group one attended a Web-based course, group two lectures, and group three was blended. It was found that, on average, students attending the hybrid format performed better than the other two groups and that the level of student acceptance of Web-based course offerings was high. The performance of those attending the Web-based format was comparable to that of those attending lectures. However, in Goldberg's experiment, students attending Web-based courses also attended regular meetings with the instructor to discuss their perceptions and problems with the course. Additionally, due to scheduling problems, students attending Web-based instruction did a different mid-term exam (Goldberg 1997).

Rivera and Rice (2002) conducted a similar study for the teaching of an undergraduate introductory course in Management Information Systems, where one instructor taught the traditional section and the other instructor taught the Web-based and hybrid sections. It was reported that, although student performance across the three different modes of delivery did not differ significantly, students in the online section were significantly less satisfied with the course (Rivera & Rice 2002). A number of problems arise from this study. First, the course was taught by different instructors with possible different teaching styles and interests. This could contribute to potential instructor effects. Second, no pre-test was administered at the beginning of the course, thus making it difficult to ensure the extent to which student performance had been attributed to mode of delivery. Third, the Web-based class still met once a week to discuss assignments. All these methodological issues have the potential to affect the findings.

Abdullat and Terry (2004) investigated the effectiveness of campus, online and hybrid instruction in Computer Information Systems for students enrolled in a graduate MBA course. It was reported that, after controlling for several pre-existing differences, such as ability, effort, and demographic factors, students attending in a hybrid mode of instruction significantly outperformed those in traditional and online formats. The in-class section outperformed the purely online

section, but not significantly, and the online format was reported to be less favoured in terms of students' evaluation of both the faculty and the course. However, as the author noted, the fact that students self-selected the format may introduce bias to the results. The authors called for further investigation to confirm their findings (Abdullat & Terry 2004).

Terry and Lewer (2003) compared the effectiveness of the three different modes of instructions: face-to-face, Web-based and hybrid instructions in the teaching of Macroeconomic Theory or International Economics. It was reported that while face-to-face students significantly outperformed online students (as indicated by the final exam scores), no significant difference was found between face-to-face and hybrid groups. This is also the case with students' evaluation of the course. The authors concluded that, of the three different modes of delivery under comparison, online appears to be the least preferred, followed by hybrid and face-to-face. In other words, face-to-face was the most favourable of all. The researchers recommended further study before a solid conclusion can be confidently drawn.

Reasons, Valadares, and Slavkin (2005) compared the effectiveness of the three different modes of instructions for teaching two introductory courses: Introduction to Educational Psychology and Introduction to Health Care Delivery System over three academic years using similar teaching methods. Three indicators were used to assess the effectiveness of mode of delivery: course participation, course grades, and interaction with course website. It was found that, in terms of course grades and interaction with the course website (two of the three indicators used), students in the online group significantly outperformed the other two groups. However, the criteria 'interaction with course websites' may not be suitable for assessing the effectiveness of the three different modes of instruction. Instinct tells us that students attending pure online instruction would most likely have the most frequent access to course websites compared to the other two groups.

Gutierrez and Russo (2004) examined students' learning outcomes and attitudes to a unit – an Introduction to Business – taught by means of the three different modes of delivery: online, hybrid, and conventional face-to-face

classroom instruction. It was reported that, whereas face-to-face students have more positive attitudes to a number of variables measured, hybrid group outperformed both online and face-to-face groups and face-to-face group outperformed online group in terms of unit grades. In other words, in terms of learning outcomes, hybrid group is superior to the other groups. Interestingly, in terms of students' attitude, face-to-face is superior. It is worth noting, however, that the result of this study might have been very different if it was conducted with units related to language teaching, particularly as far as foreign language teaching is concerned. Additionally, as the authors noted, the study employed a small sample (between 13 to 20 students in each group), thus limiting the generalisability of the study with other student populations.

A recent study comparing the three modes of delivery was conducted by Biggs (2006). The study reported on student perceptions of student interaction and collaboration, personal relevance, authentic learning, active learning, student autonomy and satisfaction, but did not address the question related to student performance or learning outcomes. In other words, further investigation into the three different modes of delivery is crucial if we are to better understand how these three different formats might affect students' learning and learning experience.

Although some research has examined the effectiveness of hybrid relative to in-class and online instruction, variations exist in the percentage of online and in-class, as well as in the design of the activities included in each format. For example, some studies use face-to-face for 'lectures, assignments, and tests', and the online section for the delivery of course materials or for discussions (Rivera & Rice 2002). Other studies simply intersperse face-to-face and online (e.g. first week face-to-face, second week online, and so forth.). These variations in how the hybrid of face-to-face and online learning is planned could potentially have a significant impact on students' learning and learning experience[12]. Research should, therefore, examine the impact of different hybrid formats on students' learning and learning experience.

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[12] For example, would a hybrid of 50:50 have a similar impact with that of 30:70?

Olson and Wisher (2002) noted that, in terms of content area, discrepancies were found in the studies published between 1996 and 2002, in that, while the overwhelming majority of research studies investigating the efficacy of online courses focused on science-related subjects, only two studies (four percent) were related to language teaching. Neither of these two studies attempted to compare the efficacy of the three different modes of delivery in the EFL context in general, and in the Indonesian context in particular. Similarly, Wang and Sun (2001) also noted that "research in the area of language learning at a distance has occupied only a marginal status in the entirety of distance education research, both in terms of quantity and quality" (p. 540). This is particularly true so far as teaching certain language segments are concerned (i.e. Writing, Grammar, Reading, Speaking, and Listening Comprehension). Consequently, little is known about the effectiveness of Web-based instruction compared to conventional face-to-face classroom teaching in language classrooms.

In addition to examining students' learning outcomes as a result of online, in-class, and hybrid teaching, some studies have also examined students' attitudes to and perception of online courses as discussed below.

2.2.6.3 Students' Attitudes to and Perceptions of Online Courses

Research studies have shown the relative importance of students' perceptions of the learning environment. For example, Fraser and Fisher (1982) reported that students' perceptions of the classroom environment are significantly related to their learning outcomes. The finding is confirmed by Lizzio, Wilson and Simons (2002) who found that students' perceptions of their learning environment had an impact upon their learning outcomes, both in terms of their academic achievement and course satisfaction. Thus, examining students' perceptions and attitudes to online courses is critical since it has direct implications for their learning and learning outcomes.

Previous studies concerning students' attitudes to online learning have reported mixed and inconsistent results, just like results of studies on students' learning outcomes. Whilst some studies reported that students valued their online learning experience, others suggested quite the opposite, suggesting the need for

further studies into this area. Results of previous studies on students' reactions to online learning will be presented and discussed below.

Hannay (2006) investigated students' perception of online courses. Most of these students were adults. It was reported that distance learning was highly valued by these students, primarily owing to the fact that such education enables them to attend to their other commitments, be they personal or professional. These participants also believe that the educational experience they have through distance learning is of a high quality. However, since the majority of the participants in this study are adults who normally have various commitments and obligations, this finding is not surprising. It would be interesting to see whether this result also holds for campus-age students.

In a study conducted by Iverson, Colky, and Cyboran (2005), online students reported that they found the subject – an introductory course in training and development – more difficult than what was reported by their in-class student counterparts. Interestingly, however, online students were significantly more positive about the course, in that they found the class more enjoyable and more useful than what their in-class students reported. It was also found that online students were more motivated and more likely to make use of 'metacognitive strategies' in their learning. In other words, although online students recognise that online learning is difficult, this perception does not negatively affect their evaluation of its merit. Given that online students are also more motivated than in-class students as reported by researchers in this study, this positive evaluation may, in fact, be attributed to students' motivation. More likely, learners who are strongly motivated are inclined to take challenges and are more likely to have a more positive attitude compared to those who are less motivated.

Day, Raven, and Newman (1998) examined students' learning outcomes and attitudes to writing in a technical writing course offered in two different formats: online and face-to-face. Over time, students in the online section not only outperformed those in the classroom section on a number of achievement measures, but they were also reported developing a more positive attitude to technical writing compared to their in-class student counterparts. Thus, it appears that an online learning environment is highly suitable for the teaching and

learning of a writing course. However, it is not clear whether online learning is also appropriate for the teaching of other language segments, including grammar.

Mourtos and McMullin (2001) compared online to traditional face-to-face classroom instructions for the teaching of engineering courses on students' learning experience. It was reported that while students were generally satisfied with their experience with online courses they attended, they were basically unsure about the effectiveness of such courses. In other words, although the students' ratings of the course and the teacher may be reasonably high in an online course, this positive evaluation does not necessarily reflect their belief in the effectiveness of such a course.

Jones and Chen (2008) examined students' satisfaction with hybrid instruction for the teaching of an accounting course to graduate students. The study reported that hybrid students were more positive on a number of aspects such as group work experiences, teacher's feedback and outside of class interaction than the students in the face-to-face format. Students in the hybrid section particularly expressed their appreciation of the face-to-face part of their class. Additionally, they were also more positive with their after-class interaction with the instructor and the classmates. In other words, whilst hybrid students could actually interact with one another using synchronous and asynchronous communication, they still valued the face-to-face part of their class. Obviously, whilst some students could comfortably rely on synchronous and asynchronous communication in the absence of face-to-face interaction for their learning, other students may believe that face-to-face interaction with their teacher and friends cannot be replaced by technology-mediated communication.

Liu (2006) compared students' evaluation of the teaching of an educational research course that was delivered in two sections: online and face-to-face. The course was taught by the same teacher. It was reported that students' evaluation of instruction in both sections was statistically insignificant, leading the author to conclude that online teaching is comparable to face-to-face instruction and that the introduction of such courses in higher education is justifiable. Whilst the conclusion concerning the viability of online courses for the

above mentioned course may be justified, their effectiveness with other subjects remains inconclusive.

In short, the studies discussed above all suggest that online students have positive attitudes towards online learning. These positive attitudes are partially attributed to the fact that online learning offers flexibility, quality learning, and is enjoyable, although it is sometimes perceived as more difficult than learning in a face-to-face classroom. However, there are also studies reporting on students' less positive attitudes to such an instructional mode of instruction which will be discussed immediately below.

To begin with, Allen *et al.* (2002) compared course satisfaction between distance education and conventional classroom instruction. It was reported that participants tend to be more satisfied with traditional courses than with distance education delivery. Another study reported that not only do students disprove of distance learning, but they are also jealous with their counterparts attending traditional teaching (Hannay 2006). What is more, a recent study reports strong student dissatisfaction and negative feelings about attending online courses (Rovai *et al.* 2006).

Furthermore, Gallagher, and McCormick (1999) found that although students recognise that they received a good education through distance learning, they seem to suggest that they are more comfortable with traditional teaching techniques. Similarly, Ponzurick *et al.* (2000) reported that whilst students taking a Graduate Marketing Education indicated that Web-based courses are convenient, they believed that such courses are neither effective nor satisfying. Unfortunately, 'convenience' appears to be the main reason for taking online courses. For example, Hiltz (1997) reported that almost three quarters of the students reported that online courses are preferable, as they are 'more convenient' than traditional face-to-face instruction. Introducing online courses solely on the basis of their convenience is both ethically and academically problematic. Serious consideration should be made beyond their mere convenience and flexibility – two of the most-cited benefits of online learning in the literature. Perhaps it is still worth running courses which are inconvenient, but which are perceived as effective rather than the other way around.

Beard and Harper (2002) examine students' perceptions of and attitude to online learning in a hybrid course for a subject entitled 'Characteristics of Severe Disabilities' taught by the same instructor using the Blackboard platform. A questionnaire was administered to gauge students' perceptions of such a course. It was reported that, whilst all students expressed their interest in future online courses, some of them also voiced their concern in two major areas: firstly, the insufficient interaction with the teacher and among themselves and, secondly, the unreliable technology. In other words, although students are provided with a number of tools to communicate with the teacher online, participants still feel that their interaction is insufficient. Interaction between the students and between the students and teacher plays a crucial role in the success of Web-based distance education (De Verneil & Berge 2000; Gunawardena & McIsaac 2002; Sherry 1996).

Fortune, Shifflett, and Sibley (2006) compared traditional face-to-face instructions and online learning on students perceived learning and on the importance of face-to-face interaction. The study was conducted with students taking a Business Communication Course. It was found that students in both formats reported different perceived learning and that they differed significantly in how they perceived the importance of face-to-face interaction in their learning. As far as perceived learning is concerned, face-to-face group was more positive than online group, although the effect size (indicating its practical significance) was small. As for the preference for face-to-face interaction, the face-to-face group was more positive than the online group in that students attending Web-based course offerings desired face-to-face interaction less than the face-to-face group. In other words, the face-to-face group was more positive than the online group when it comes to the importance of face-to-face interactions. However, Swan *et al.* (2000) reported that students expressed high perceived learning and reported high satisfaction with online instructions.

Keller and Gernerud (2002) examined the perceptions of Jönköping University students towards e-learning. It was reported that access to e-learning was not considered to be a benefit by the students, and they concluded that "the implementation strategy of an e-learning system plays an important role in

influencing the students' perceptions" (p. 65) and this implementation strategy affects students' perceptions of e-learning more strongly than does other individual variables. Keller and Gernerud further reported that computer literacy does not correspond to perceptions of e-learning in that students who lack computer literacy skills were more positive about technology than those who were more computer literate. The authors speculated that students with high computer literacy may have higher expectations concerning the use of the platform, but acknowledged that this speculation was not confirmed by the qualitative data. This finding contradicts that of Rivera and Rice (2002) who reported that lack of computer literacy is one of the most important factors responsible for students being less satisfied with online courses.

In short, the studies reported above indicate that online students have less positive attitude towards online learning. In fact, in some cases, students expressed their dissatisfaction quite strongly, indicating their disproval of online learning. Interestingly, students' perception of the quality of education offered online does not necessarily guarantee that, when given a choice, they would opt online learning over face-to-face classroom instruction. For some students, face-to-face classroom instruction is still perceived as more comfortable. Similarly, while some students may perceive online learning as more convenient, they do not necessarily believe in the effectiveness of such educational approach. Another source of dissatisfaction concerns lack of interaction among the students and between the students and the teacher, as well as technical problems.

Therefore, studies examining students' attitude to and perception of online learning have resulted in conflicting and inconsistent findings. Whilst some studies reported that students have very positive attitudes to online learning, others reported quite the opposite. These conflicting findings regarding students' attitudes to and perceptions of Web-based distance education may be attributed to a number of factors.

One factor is students' beliefs about what constitutes good education which could, in turn, affect their evaluation of distance learning (Allen *et al.* 2004). For example, whereas some students believe that conventional education can be replaced with distance education, others may believe that conventional

face-to-face classroom teaching is the only way they could receive good education. For these students, no matter how well designed online courses are, their evaluation of such courses would most likely be less positive compared to classroom tuition.

Another factor responsible for the conflicting and inconsistent findings in the research studies reported above concerns the study design. For example, as mentioned earlier, some studies (e.g. Rivera & Rice 2002) failed to control for pre-existing differences in students' performance prior to attending different modes of instruction. As a result, it is difficult, if not impossible, to ascertain the extent to which different learning environments have actually impacted on students' learning. Notwithstanding these flaws in research, it is generally agreed that, with the ubiquity of the new technologies, the question is not *whether* or not we should use technology; rather, *how* to use technology to enhance students' learning.

Other factors – learning styles (Diaz & Cartnal 1999) and learning preference (Wallace 1996) – could potentially play a crucial role in students' evaluation of the effectiveness of online learning. Such terms as 'learning style' and 'learning preference' are often used in the literature to refer to differences in individuals pertaining to the way they learn (Wallace 1996). However, the term learning preference is particularly concerned with learning methods or learning environments that would suit best each individual. In comparison, learning style reflects the way each individual processes information in a given learning environment (Wallace 1996). Therefore, both learning styles and learning preferences could potentially affect students' performance levels in a given learning environment, but also their perception of the effectiveness of such learning environment.

Conversely, some students may enjoy learning in front of computers, for example, so it is important to realise that not all students share the same view. Since each individual has a different attitude to and belief about computers, using computers as a medium for learning could be advantageous to some students and disadvantageous to others (Campbell 1990). In fact, some students may not be interested in reading course materials from a computer screen. Others may not be

able to stand prolonged exposure to a computer screen. For these students, online learning may not be perceived as an effective method. Similarly, whilst some students can learn independently, other students may need constant guidance from the teacher in a face-to-face session with the teacher. These differences in students' characteristics could, in the end, affect how students view the effectiveness of online learning. In other words, mixed findings reported by previous studies concerning the effectiveness of online learning relative to conventional classroom instruction may simply be attributed to the characteristics of the students involved in those studies.

Furthermore, familiarity with technology may also affect students' attitudes to technology-enhanced learning (Holscherl & Strubel 2000). Obviously, students who have sound computer literacy and have always been using computers in the past, or have been relying on computers in their daily life, are expected to develop a more positive attitude to technology compared to those who have never used computers in their life or who have always encountered a problem when using technology. It is important to realise that, for some students, particularly those who are techno-phobic, technology-assisted learning just adds an extra burden to their learning. For these students, clicking on the mouse could be a big deal, let alone using computers as the main tool for their learning. This type of student is most likely to report a less positive evaluation of online learning compared to those who are comfortable with computers.

Finally, the delivery mechanism used in distance education could also potentially affect students' evaluations of such education. For example, students would probably judge the effectiveness of correspondence study quite differently from technology-mediated learning. Similarly, students would probably judge online courses using bulletin boards differently from those that do not. Put simply, different types of communication media employed in an online course would most likely result in different evaluation of the effectiveness of such a course. Thus, it appears that differences in students' characteristics and in the type of communication media employed in online learning might be amongst the factors responsible for the conflicting findings reported in the literature. Researchers should, therefore, report as specifically as possible what communication media are

employed when examining the effectiveness of online courses and how they are employed. This is important, since previous studies suggest that students' online learning experience is related to the capability of media in supporting communication: the more channels provided, the more satisfied the participants with their course experience (Williams, Nicholas & Gunter 2005).

2.2.6.4 Participating in Online Discussion

Classroom participation is one of the most important aspects of student-centred methodology. Participating in various classroom activities provides opportunities for the students to 'construct' their own knowledge through their interaction with their classmates and the teacher. Therefore, investigating students' perceptions about participating in online discussion is critical since it could affect their actual participation in this learning environment.

Hannay (2006) reported that students' perceptions of and attitudes to technology could affect their satisfaction with, and participation in, online courses. In other words, students who have more positive perception about participating in online discussion tend to be more satisfied with the course and, most importantly, tend to participate more than those who have a less positive attitude. Therefore, engendering students' positive perception prior to the implementation of online courses is critical, as this may eventually affect their participation in such courses.

Furthermore, Xie, Debacker, and Ferguson (2006) reported that whether or not the students are willing to participate in online discussion forum depends crucially on how valuable the activity is perceived by them. In other words, if the students believe that participating in an online discussion board is useful for their learning, they will be inclined to participate. If, however, they do not see how the discussion board will help them learn course materials, then there is a propensity for withdrawal. The implication of this finding for instructors is that it is important to convince the students of the importance of participating in online discussion forums; for example, by encouraging discussion directly related or linked to course materials in such a way that students feel that they learn something by participating in the forum.

However, convincing the students of the importance of participating in online discussion is not sufficient in itself. The forum needs to be well-facilitated to attract participation. In fact, previous studies have shown that students' participation in online discussion forums is reportedly related to how well the forum is facilitated. An online discussion board which is well-facilitated tends to invite more participation (Xie, Debacker & Ferguson 2006). On the other hand, no matter how sophisticated the design of the bulletin board, it may not attract students' interest in participating if it is poorly facilitated. In other words, it is not the bulletin board *per se* that invites participation; it is the way it is facilitated that matters most. Effective facilitating strategies include, but are not limited to, posting questions, giving comments when required, addressing students by names, and attending to students' queries immediately, rather than later. However, the instructor should not interfere too much with the flow of the discussion as this could lead to the teacher dominating the discussion.

Having said that, encouraging students' participation in online discussion is not an easy task; it is even more difficult to maintain this participation over time. Previous studies (e.g. Matusov 2005) reported that there was a decrease in the number of students' postings over time. In other words, students tended to participate more at the beginning of the semester and this participation waned as the course progressed. Whilst the reason for this phenomenon was not exactly known, the researcher speculated that this was due to the fact that students, at the same time, had to cope with the increased demands from other units they took that semester. Nonetheless, students reported that they enjoyed participating on the Web discussions and particularly rated the class as being highly successful due to the forum, although some students were originally reluctant at the beginning for various reasons. Interestingly, some students consistently reported that the success of the forum was attributed to the fact that participation in the forum was mandatory.

Interestingly, previous studies (e.g. Coates & Humphreys 2001) reported that participating in online learning, in the form of posting comments or doing quizzes, has a direct bearing on students' performance. These authors reported that sending postings to the forum and doing quizzes were correlated with

students' exam scores. The study concluded by emphasising the importance of "developing self-test quizzes and effective bulletin board discussion projects and less on generating on-line content" (p. 133). Additionally, doing online quizzes, where different types of feedback, from the true-false type to feedback providing elaboration on the types of the errors the students made, could help learners identify the area where they should focus more on their learning.

In conclusion, as Bures, Abrami, and Amundsen (2002) suggested, students' perceptions of the usefulness of the technology is crucial not only because it could affect their participation, but most importantly, because it could also affect their satisfaction with the course. One of the crucial tasks of online instructors is to engender students' positive attitudes to online learning, encourage participation, attend to students' queries promptly, and carefully facilitate the discussion. It is necessary that online students be aware that the teacher is there, but also that they do not feel intimidated by the online presence of the teacher. Needless to say, this requires sound facilitating skills.

2.2.7 Online Learning across Different Subjects
The benefits and drawbacks of Web-based course offerings across different disciplines have long been a controversial topic (Sauers & Walker 2004). The question of whether online learning is equally effective across different subjects or whether it is more effective for certain subjects than for the others, proves to be a tough one. Therefore, as suggested previously, research across different disciplines is required to be able to understand what subject is more appropriate taught via online and what subject is better taught face-to-face (Frost and Fukami 1997).

O'Neal *et al.* (2007) observe that "…teacher educators question the appropriateness of WBI in the field of education and articulate the need for further investigations to determine which courses, if any, are appropriate for online environments" (p. 36). They further argue "…it is possible that the content of specific courses is more conducive to WBI than content in other types of courses" (p. 40). Examining the effectiveness of online learning on a subject-by-subject basis will provide us with a better understanding of which subject is more, and

which subject is less, appropriate for online learning. This understanding could, in turn, help educators make informed decisions concerning when to use the Web and when to turn to conventional face-to-face classroom teaching. Unless online learning methods have been exhaustively tested with a wide range of fields and subjects, its true effectiveness across different subjects will remain contentious.

Rovai and Barnum (2003) correctly argue that one of the problems that make the generalisability of research concerning the effectiveness of Web-based-instruction difficult is that the characteristics of the course under investigation vary from study to study, thus its results. Thus, whilst online learning may prove to be effective for teaching statistics, for example, it is a fallacy to assume that it will necessarily be equally effective for teaching foreign languages. Again, as mentioned previously, this necessitates the examination of online learning across different subjects to truly understand its effectiveness. Unfortunately, as Olson and Wisher (2002) note, relatively very few studies have examined the effectiveness of online learning with language teaching, particularly foreign language teaching. This is even truer for teaching of particular language segments, such as the grammar, vocabulary, listening/speaking, etc.

To sum up, although research studies have examined the effectiveness of online learning, no generalisation can be made with a high degree of confidence regarding its effectiveness, simply because the characteristics of the subject taught also come into play. Therefore, to truly understand the effectiveness of online learning, research needs to examine online learning on a subject-by-subject basis, as already emphasised earlier. Since online language learning is one of the areas that has received little attention, research into this area will help us to better understand the effectiveness of online learning in general, and in language teaching in particular.

2.2.8 Challenges for Distance Learning

Although distance learning is more flexible than conventional classroom instruction because it provides 'any time', 'anywhere', learning opportunities, success in such a learning environment requires considerable commitment and devotion on the part of the students.

In order to succeed in a distance learning program, students have to be "self-motivated and self-disciplined" (Uhlig 2002) as well as be active, rather than passive (Stansfield, McLellan & Connolly 2004). Similarly, Howland and Moore (2002 p. 188) identify three attributes of successful online learners: "self-management, self monitoring, and motivation". This is understandable given the fact that, unlike students attending conventional education, students in distance education learn on their own time without a teacher's supervision. Procrastination is only one problem facing the students in such a learning environment. Additionally, online learning requires extra motivation on the part of the learners. Students are also required to take more responsibility for their own learning than what is required of students in traditional face-to-face classrooms. Whereas students who like to study independently and who are self-disciplined may have no problems coping with online course demands, those who depend on the teacher for their learning may not be able to take full advantage of this instructional method. Therefore, online learning is by no means easier than conventional classroom (Uhlig 2002).

Additionally, although online learning is flexible in terms of time and space, it requires that extensive time and commitment be devoted to the course (Uhlig 2002). Undoubtedly, students taking distance learning will have to spend more time and effort in coping with course demands. In the absence of the teacher, students have to deal with their learning and learning problems themselves. This type of learning will, needless to say, require not only responsibility, but also high commitment and unreserved dedication from the students. Unfortunately, this is not such an easy task and not all students are capable of taking such huge responsibilities. It is not surprising, therefore, that students taking distance learning are prone to dropping out (e.g. Carr 2000; Garrison 1987; Johnson *et al.* 2005; Worley 2000).

2.2.9 The Role of the Media and Pedagogy
An interesting debate regarding the effectiveness of online courses relative to conventional face-to-face classroom instructions is the question whether it is the media or the instructional design (pedagogy) that dictates the effectiveness of

online learning. The following section will provide a general overview of this debate and critically evaluate each of the arguments.

To begin with, Rovai (2002c), drawing on previous studies, concludes that, as far as learning effectiveness is concerned, the pedagogy/method is more important than the media used. Ali and Elfessi (2004) reinforce this view by arguing "one common mistake made in the use of the Web is the focus on technology at the expense of pedagogy" (p. 2). In other words, these researchers argue that, as far as the effectiveness of online learning is concerned, the pedagogy is more important than the media/technology employed.

Clark (1983) is even more extreme in describing the impact of technology on learning and writes: "media are mere vehicles that deliver instruction but do not influence student achievement any more than the truck that delivers our groceries causes changes in our nutrition" (p. 445). Put simply, in Clark's view, technology does not have a significant impact on students' learning.

Clark's bold argument about the role of the media in students' learning invites heated debate in the field. For example, Kozma (1994) argues that the role of the media cannot be completely ignored. In fact, the author argues that media will affect learning and writes "if there is no relationship between media and learning it may be because we have not yet *made* one" (p. 7 – emphasis in the original).

Arguing in a similar vein, Blake *et al.* (2008) write, "The EFL teacher, not the medium, will ultimately determine whether or not any given instantiation of a DL language course makes a positive contribution to the L2 student's long march to advanced proficiency" (p. 124). In other words, these researchers argue that it is the teacher that dictates the quality of learning in the second language distance learning program. This position implies that the medium plays little or no role at all in EFL students' learning.

Furthermore, Salaberry (1996, as cited in Fox 1998) suggests that "it is not the medium itself that determines the pedagogical outcome, but the specific focus of the theoretical approach on the language learning phenomena" (p. 65). In other words, for Salaberry, it is the theoretical underpinnings upon which the design of

any technology-enhanced learning program is based, and not the medium *per se*, that dictates learning effectiveness.

In short, the above researchers all argue that technology either plays a minor role or does not play a role at all, as far as the effectiveness of technology-enhanced learning is concerned. These researchers claim that it is the pedagogy/method, the teacher, and the theoretical underpinnings that are more important. I would, however, argue that both technology and the way it is utilised (pedagogy) are relevant when examining the effectiveness of online learning[13]. Since the importance of pedagogy has been strongly emphasised by previous researchers, I will only discuss the relevance of the technology or medium to this debate.

First of all, technology is relevant because it supports the application of the instructional design of online learning. For example, student-centred pedagogy could not possibly be realised if the technology does not have the capacity to facilitate effective communication among the students. In other words, instructional design should always employ technology that is conducive for the application of such a design. If technology is not important at all, then it does not really matter what communication media is employed for a given instructional design. In fact, it is generally accepted that the choice of media in teaching should be informed by the instructional design and not the other way around: we design the lesson first and then decide what media are best to support such a design. For example, synchronous communication is more preferable then asynchronous communication for discussion constrained by time (i.e. not much time is available for discussion). On the other hand, asynchronous communication is better for discussion that is not constrained by time (in this case, students have ample opportunities to edit and revise their postings many times before submitting it to the forum).

Secondly, previous study suggests that communication media affect students' satisfaction with online courses in that the more channels provided, the more satisfied the participants about their course experience (Williams, Nicholas

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[13] In fact, as I will discuss in Chapter 5, other factors, such as student characteristics and teacher characteristics, also come into play in addition to technology and pedagogy (instructional design).

& Gunter 2005). However, Roach and Lemasters (2006) also reported that whether or not students are satisfied with online learning depends very much on course structure and design. In other words, both media and the way they are utilised have an impact on students' satisfaction and learning experience. Online students communicating exclusively via e-mail will most likely have different learning experiences from those communicating via a wide range of media, such as chat room, bulletin board, and email. In this case, it is difficult to deny the fact that technology does, in fact, play an important role in the effectiveness of online learning.

However, it is important to emphasize that providing communication media will not necessarily result in effective learning if it is not supported by sound instructional design, that is, the way technology is employed. Fischer and Scharff (1998) correctly argue that "[o]ne of the major misunderstandings in our current debate about enhancing learning with new media is the assumption that technological advances will, by virtue of their very existence, improve the quality of learning" (p. 5). Needless to say, effective learning will only be achieved if the instructional design matches the type of technology employed. Discrepancies in these two areas could be detrimental to students' learning and learning experience.

To sum up, both pedagogy/method and technology should be taken into account when designing any online learning program. Unlike Clark's analogy mentioned above, I would rather see the role of technology in online learning as something like the brush and ink used in painting. The quality of a painting is not only dictated by the method of painting (pedagogy or theoretical underpinnings), but also by the brush and ink (technology) used. Obviously, the role of these two in the production of DaVinci's paintings cannot be underestimated.

2.2.10 Web-based Courses in Language Classrooms

Whilst the effectiveness of technology-enhanced learning in education is controversial, it is even more controversial in language classrooms. This is simply because face-to-face interaction between the teacher and the students is vital to language learning (Ng, Yeung & Hon 2006). However, previous studies also suggest that technology could be advantageous for language learning (e.g. Zhao

2003). Thus, given the reported benefit of technology in language learning and, at the same time, the importance of face-to-face interaction with the teacher, it would be interesting to examine students' language learning experience with Web-based instruction in the absence of face-to-face interaction with the teacher.

ESL classrooms have been using the Internet over the past twenty years or so (Greenfield 2003). However, it has been during the past decade that use of the World Wide Web in both second and foreign language classrooms has undergone a dramatic increase (Fukushima 2006). Following the introduction of the Internet in language classrooms, research studies have also examined various applications of the Web in this context.

These studies on the application of the Web in language classrooms include teaching English for Specific Purposes (Nesi 1998), the provision of feedback to online language learners (Hyland 2001), use of synchronous communication to improve speaking skills (Payne & Whitnet 2002; Wang & Sun), the usefulness of involving native speakers in chat rooms (Tudini 2003), redefinition of 'oral competence' in a synchronous computer mediated communication language environment (Lamy 2004), tutors' strategies in providing feedback to ESL learners interacting in Web-based conferencing (Lamy & Goodfellow 1999), similarities and differences in 'repair moves' in synchronous communication conducted through text and voice chat rooms by non-native English speakers (Jepson 2005), use of audio conferencing in the tuition of a German course using Lyceum (Hampel & Hauck 2004), the effect of different task types on the behaviours of learners of French as a foreign language (Lamy & Hassan 2003), teaching translation (Connel 1999), and teacher's teaching strategies in a hybrid Russian class employing CMC as additional language practice (Meskill & Anthony 2005).

Other studies specifically addressed the question related to the effectiveness of online language learning compared to conventional face-to-face classroom instruction. Whilst these studies examined the effectiveness of teaching various language skills, such as speaking, writing and reading, by comparing face-to-face and online methods, little, if any, actually examined the effectiveness of hybrid relative to pure online and face-to-face tuition for teaching English

Grammar to students who are learning English as a foreign language at a tertiary education level. The following section will present and discuss results of research studies concerning the effectiveness of online learning relative to face-to-face classroom instruction in teaching various language skills. Students' perception, as well as their learning outcomes as a result of attending a given mode of instruction, will be reported.

Blake *et al.* (2008) observe that scepticism concerning the effectiveness of online learning for teaching oral language proficiency is common amongst foreign language teachers. Consequently, these researchers conducted a study to address this issue by examining Spanish language proficiency of students attending the three different modes of instruction: hybrid, online, and face-to-face teaching. It was reported that the language proficiency of the students across the three different groups was at a comparable level. However, this study did not examine students' mastery of the grammar, nor did it examine students' perception as a result of attending one of the three modes of instruction. Examining students' perception concerning the benefits and drawbacks of each of the three modes of instruction is crucial because it provides important information concerning the viability of these methods from the standpoint of the students. It is also important because students' responses could be constructively used to improve teaching in the future. The researchers recommended further studies employing both qualitative and quantitative approaches.

Payne and Whitnet (2002) conducted an experiment to examine the effects of computer-mediated communication (using chat room) on oral proficiency. It was reported that the experimental group (group participating in the chat room) exhibited significantly higher proficiency than the control group (those attending face-to-face instruction), leading the authors to conclude that computer-mediated communication could be effectively used to improve oral proficiency. However, the authors emphasized that they did not suggest the replacement of a classroom setting with computer-mediated communication for teaching speaking. Rather, they argued:

It may be most useful to view the chatroom as analogous to the flight simulators used by pilots in training; the chatroom sessions may well serve as a *conversation stimulator* for foreign language learners (p. 25).

One possible reason for the improvement in students' oral proficiency as a result of participating in the chat room is that "chatting provides opportunities for the negotiation of meaning, as occurs in oral interaction" (Tudini 2003 p. 141), a process which is critical to language acquisition. However, it is important to realise that there is a certain discourse that can only be acquired in a face-to-face setting. It is for this reason that face-to-face interaction is still considered important for language learning. With respect to the importance of face-to-face interaction, Tudini (2003) writes:

Chatting…cannot replace oral interaction in a real life context, nor can it provide the physical aspects of oral discourse such as pronunciation and other non verbal features… (p. 157).

The importance of face-to-face communication may vary with language skills. For example, face-to-face may be more important for acquiring oral language proficiency (speaking) than for learning grammar, vocabulary, and reading.

Drawing on previous studies, Strambi and Bouvet (2003) also noted that computer-mediated communication could provide comparable opportunities for negotiation of meaning with face-to-face interaction. Moreover, the author noted that negotiation of meaning through computers could be more effective than that through face-to-face interaction, primarily due to the nature of written communication. In technology-mediated communication, users are afforded ample opportunities to edit messages before getting them posted, which is most likely to result in better 'output'. There is also evidence suggesting that computer-mediated communication provides a better 'comprehensible output' by providing an amicable environment that encourages language production (Pennington 1996).

Yang and Chen (2007) investigated students' perceptions of using different technology-enhanced communication media including "group e-mailing, a Web-based course, an e-mail writing program, English homepage design, video

conferencing and chat room discussion" (p. 860). It was reported that although the overwhelming majority of the students had a positive attitude to technology in learning English, they did not share an agreement regarding the benefit that the technology could offer. In other words, although the students like to participate in technology-enhanced language learning, they will not necessarily believe that such an activity will be beneficial for their learning. Interestingly, this finding is similar to that reported by Mourtos and McMullin (2001) who examine the effectiveness of online learning for teaching engineering courses.

Fitze (2006) compared face-to-face and technology-mediated conferences in terms of the number of words produced by ESL learners in a certain amount of time. It was reported that students in both groups produced about the same number of words with exactly the same amount of time. However, participants using technology were reported to produce a richer lexical range than those in face-to-face conference.

Green and Youngs (2000) examined the effect of World Wide Web in two courses, Elementary French (taught in the first semester) and German (taught in the second semester). In their studies, participants were divided into two groups. The first group, the control group, attended in-class instruction with the teacher four days a week. The second group, the treatment group, also attended in-class instruction three days a week and were working online to compensate the one missing day. The researchers were particularly interested in the performance of the students in both groups in the following areas: reading, writing, listening, speaking and cultural understanding. It was found that the performance of the students in both groups in the above areas was not statistically different. However, in this study, the experimental group also attended in-class instruction three days a week, making it difficult to argue that their overall progress was, in fact, attributable to mode of instruction. It could well be that both groups performed equally well simply because they both attended in-class instruction in the first place. Obviously, it would be interesting to see whether the results still hold should the experimental group work entirely online. Additionally, whilst this study examined students' writing, listening, speaking, and cultural understanding, it did not look at students' grammar.

Nichols, Shaffer, and Shockey (2003) compared online tutorial and classroom instruction for the delivery of the course entitled English 102 at the State University of New York-Oswego. Pre- and post-tests were administered. Students learning outcomes and their course satisfaction were compared. It was found that, in both measures, the online and in-class groups were comparable.

Perhaps one of the most widely researched areas, as far as online language learning is concerned, is that of students' writing. This is understandable given the fact that most of the communication media (both synchronous, such as chatroom, and asynchronous, such as forum and e-mail) rely heavily on writing. However, even research into the effectiveness of online learning for teaching writing has yielded conflicting and inconsistent findings. Three different lines of research have been reported. The first line suggests that both formats are relatively comparable; the second line indicates that the online method is superior, and the third line suggests quite the opposite.

To begin with, Mehlenbacher *et al.* (2000) compared online to on-site instruction in a technical writing class. It was found that the performance of both groups is not significantly different. This, in turn, suggests that online and in-class instruction is equally effective for teaching technical writing.

Sauers and Walker (2004) compared conventional face-to-face and hybrid instruction on students' writing skills. It was reported that, regardless of modes of instruction, students made a significant improvement in their writing skills and, most importantly, the performance of students taught under hybrid instruction was comparable to that of students taught under traditional face-to-face instruction, provided that instructional materials are tailored to students' needs (Sauers & Walker 2004). Furthermore, the study also reported that students attending hybrid instruction employed active learning strategies through their involvement in bulletin board discussion.

Phadtare *et al.* (2009) compared online and in-class courses on scientific writing skills and the course satisfaction of medical, nursing and physiotherapy students in two countries: US and Brazil. As many as 48 students participated in the study with 24 attending online writing workshops and the other 24 attending

conventional in-class writing instruction. It was reported that the online section was superior with regard to two measures: writing quality and course satisfaction.

It has also been reported that teaching writing through the Web offers a number of advantages and, in some cases, proves to be more desirable than conventional classrooms in one way or another. For example, Yang and Chen (2007), drawing on previous studies, contended that online writing courses surpassed conventional classroom in terms of promoting students' participation and interaction, and providing feedback among students, thus increasing students' confidence levels. Based on their own research, the authors conclude that use of technology-mediated communication could, in fact, improve the quality of students' writing (Yang & Chen 2007).

Al-Jarf (2004) investigated EFL freshman students' writing skills as a result of attending classroom and a mixture of classroom and Web-based tuition. Low-level EFL female students participated in this study. Students in both groups sat the pre- and post-test. The post-test scores indicated that both groups scored significantly higher than their corresponding pre-test scores. However, a between group comparison suggests that students attending a blend of face-to-face and Web-based instruction significantly outperformed those in the control group, leading the author to conclude that integrating the Web in traditional face-to-face writing instruction is more effective than classroom textbook-based instruction alone. However, the fact that participants in the present study were all females, as the author noted, limits the generalisability of this study in other contexts. Similarly, Al-Jarf and Sado (2002) compared online with in-class learning for the ESL writing course and found the online group significantly outperformed the in-class group on a number of measures of a good writing.

Additionally, also drawing on previous studies, Ware (2004) reported that use of technology in writing class offer a number of advantages. In particular, it was reported that students were comfortable with technology-mediated instruction, exhibited a high level of participation and performed well. Additionally, it was also reported that students participating in a technology-enhanced classroom were more caring compared to those in a conventional classroom. All in all, research studies reported above suggest that the Web is an

excellent medium for teaching writing. However, not all previous studies provide support for this position.

First of all, it has been reported that the quality of EFL students' writing as a result of attending conventional classroom instruction surpassed that of students who have taken part in technology-mediated communication (Braine 2001), although students attending technology-mediated communication produced a better first draft. The author further argues that the many and unconnected messages posted in this medium could hinder the development of students' writing. However, it could well be that it is not these messages alone that are detrimental to students' writing development. How online writing activities are designed and how feedback is provided are two factors that could also be responsible for this.

Similarly, Sapp and Simon (2005b) compared students' grades and their retention in two undergraduate writing courses: First Year Composition and Business Writing. Both courses are offered in two different formats: face-to-face and online. Results of this study suggest that not only do students in online groups earn low grades compared to their face-to-face counterparts, but they also experienced a high level of incomplete, withdrawal, or fail rates. The authors further argue that, although technology-mediated communication affords social interaction through both synchronous and asynchronous communication, such interaction is insufficient, and that face-to-face meetings between the teacher and the students and among the students themselves are crucial.

Apart from examining the effectiveness of the Web for teaching the above-mentioned skills, a study by Pellettieri (2000) also examined the development of students' grammatical competence as a result of participating in the negotiation of meaning conducted through computer-mediated synchronous communication (chatting). The author reported that, in terms of its potential in developing students' grammatical competence, synchronous communication has the same potential as the classroom environment. Whilst the study suggests that participating in synchronous communication could improve students' grammatical competence, it does not particularly examine the effectiveness of online tuition for teaching English Grammar as a distinct subject.

Chenoweth and Murday (2003) compared online to in-class instruction for a number of variables: learning outcomes, course satisfaction, and the amount of time spent by students attending each format in Elementary French I. As far as learning outcomes are concerned, student performance in several language skills – grammar, writing, speaking, listening and reading – is compared. It was reported that, of all the above measures, students' learning outcomes were comparable with the exception of writing, whereby online students significantly outperformed in-class students – a finding consistent with studies reported in the previous section. However, students attending online tuition reported their frustration with online learning. Additionally, in-class students spent more time studying course materials than did their online counterparts. Although this study also examined students' grammar as a result of attending a given mode of instruction, it did not particularly look at the teaching of grammar as a distinct subject in the curriculum. Furthermore, only two modes of delivery were compared – online and face-to-face. Also, this study involved the teaching of French, rather than that of English as a foreign language. Most importantly, the course was taught by two different instructors who may have had different teaching styles in the first place.

Thirunarayanan and Perez-Prado (2002) examined the effectiveness of online, relative to in-class instruction in the ESL context. There were 29 students in online and 31 students in face-to-face groups. It was reported that whilst in-class students significantly outperformed online students in the pre-test, the post-test scores of the two groups were not significantly different, leading to the conclusion that both formats are equally effective.

Research has also shown that students participating in technology-mediated written communication appear to produce more intricate grammar compared to those interacting face-to-face (Sotillo 2000). Obviously, when participating in the forum or bulletin board, for example, students have a lot of time to revise and edit their messages, not only in terms of the language, but also for the ideas (Ware 2004), before getting them posted. This process facilitates the production of more complex sentence structure that would not probably be spontaneously produced during face-to-face communication. Thus, asynchronous technology-mediated communication appears to be fruitful for the acquisition and

production of more complex syntax, primarily due to the extra attention paid to the sentence structure.

Furthermore, echoing previous studies, Yang and Chen (2007) identified the benefits of online language learning and reported that:

> computer-mediated language learning can facilitate communication, reduce anxiety, encourage oral discussion, develop the writing/thinking connection, nurture social or cooperative learning, promote egalitarian class structures, enhance student motivation, facilitate cross-cultural awareness, and improve writing skills (p. 862).

However, whilst technology-enhanced language learning could serve to reduce anxiety, as noted by the above authors, it is important to recognise that, for some students, it could also be the source of anxiety itself. Obviously, students with no previous experience with computers, or who suffer techno-phobia, are prone to experience anxiety when relying on computers for their learning. Nonetheless, it is worth acknowledging that not all students are comfortable with computers. Nor are they comfortable with learning without face-to-face contact with the teacher.

Apart from research studies, meta-analyses are also conducted to examine the effectiveness of technology in language learning. Zhao (2005b) conducted a meta-analysis on the effectiveness of technology in language learning for studies published in a refereed journal from 1997 to 2001. The technology reviewed includes, but is not limited to, "video, audio, computer-assisted instruction programs, the Web, computer-mediated communications, simulations, speech technologies, word processing, e-books, and grammar checkers". The general conclusion is that technology-enhanced language learning methods are comparable to conventional classroom instruction. However, as the author noted, since meta-analysed studies employed different technological tools (i.e. video, speech synthesizer, etc.), it is difficult to isolate the effectiveness of each technological tool in students' learning. Moreover, of all the studies meta-analysed, none compared online with in-class instruction in the teaching of English Grammar.

With regard to the effectiveness of technology in language learning, Zhao (2005b) argues:

> …the effects of any technology on learning outcomes lie in its uses. A technology may hold great educational potentials, but until it is used properly, it may not at all have any positive impact on learning. Thus the assessing the effectiveness of a technology is in reality assessing the effectiveness of its uses rather than the technology itself. Since most ICTs can be used in a variety of ways, some more effective than others, it is inappropriate to over-generalize the effectiveness (or lack thereof) of one way of using the technology to the technology itself (p. 18).

In other words, two studies comparing the effectiveness of Web-based learning that use different communication media (one synchronous and the other both synchronous and asynchronous communication), cannot be compared simply because the technology employed is different. This is even true when instructional methods are different (Zhao 2005b). The author also noted that such a term as 'technology' is a vague concept as it covers a wide range of tools. Therefore, according to the author, it is a fallacy to assume that "the effects of video-tapes are the same as those of the on-line chatrooms just because they are all called 'technology'…" (p. 18). Whilst I share the argument concerning the importance of pedagogy in examining the effectiveness of online learning, I believe that the role of technology with respect to instructional design cannot be underestimated (see section §2.2.9 for further details).

Reiterating the argument I have postulated previously, when examining the effectiveness of online language learning, researchers should always be clear concerning *what* communication media are employed and, most importantly, *how* they are employed. That way, the potential effect of different communication media (i.e. synchronous vs asynchronous) on teaching a particular language skill can be compared across different studies. At a practical level, this will help educators make informed decisions concerning which media, or combination of media, are appropriate for teaching a particular language skill.

Furthermore, in discussing the development and directions of research in technology-assisted language learning, particularly in identifying implications for

future research, Zhao (2005a) remarks: "Research is thus needed to understand what technology is more effective for what kind of learning and how different technologies complement each other in constructing an optimal language learning environment" (p. 454). The author goes on to argue, "…*how learners feel* about learning in technology-supported environments is also important to examine for motivational reasons" (p. 455 – emphasis added). In other words, further research is necessary not only to examine which subject is better taught online or face-to-face, but also, as far as language learning is concerned, which language skills are appropriate to be taught with what media, or a combination of media. More importantly, research should also examine students' perceptions of the benefits and drawbacks of language learning employing technology relative to language learning in a conventional face-to-face classroom environment.

2.2.11 Section Summary

This section started by discussing how the early forms of distance education, correspondence study, evolved into Web-based distance education employing sophisticated technology. Whilst Web-based distance education has gained immense popularity all over the world, following previous researchers, I suggest that its true effectiveness should be examined on a subject-by-subject basis. This is due to the fact that the particular characteristics of the subject could affect the effectiveness of online learning in that some courses may be more conducive for Web-based courses than others. It was noted that research findings concerning the effectiveness of Web-based courses relative to conventional face-to-face classroom have yielded inconsistent results. These findings indicated that online students either perform equally well, perform better than, or perform poorer than traditional students.

The introduction of a hybrid method in addition to both online and face-to-face has even raised further questions concerning their effectiveness, thus necessitating examination of the three different modes of delivery: face-to-face, online, and hybrid instruction. I argue that examining students' learning outcomes and learning experiences under each of the above modes is crucial if we are to understand the merit of these delivery modes in education. Since few studies have

been conducted in the field of foreign language teaching and learning, the need to conduct research in this area becomes immediately apparent. In particular, I argue that the effectiveness of the three different modes of instruction – face-to-face, online, and hybrid – for teaching particular language skills (Writing, Speaking, Reading, Grammar, etc.) needs to be examined. This examination is important because, whilst online learning may be effective for teaching certain skills, it may not be necessarily the case for teaching others.

Finally, I suggest that both technology and pedagogy play a crucial role in the effectiveness of online learning, and neither of them could be underestimated when designing online learning programs – a position which is significantly different from that taken by some of the previous researchers.

2.3 Chapter Summary

This chapter is divided into two main parts. The first part explored two different, but inter-related, learning theories, cognitive constructivism and sociocultural constructivism, and examined the relevance of these theories to learning in both face-to-face and online learning environments. I suggested that although the assumptions underlying these theories are different, both regard social interaction as a critical aspect of learning. From the standpoint of cognitive constructivism, social interaction is important because it provides the learners with the opportunity to experience disequilibrium, leading to cognitive restructuring and learning through interaction with others. From the perspective of sociocultural constructivism, social interaction is critical simply because it is not only instrumental to learning, but it also constitutes learning in itself. Since social interaction is central to constructivism, I further suggested, following Felix (2002), that constructivism pedagogy is particularly relevant to online learning through the use of both synchronous and asynchronous communication. Additionally, I also argued that constructivism is particularly relevant for language learning in which case social interaction is critical in any language classroom. In this respect, Second Language Acquisition theory was briefly discussed and examined and its compatibility to constructivism was demonstrated.

The relevance of both constructivism and the Second Language Acquisition theory to online learning was highlighted.

The second part of this chapter provided a reasonably comprehensive account of Web-based distance education. It started by exploring how traditional distance education has evolved into modern Web-based distance education and then examined the application of Web-based distance education across different fields. Such a question as how effective is Web-based distance education compared to conventional face-to-face classroom was critically evaluated in light of research studies in the area. Discrepancies in these studies were also demonstrated. Based on this review, it is clear that comparing the effectiveness of the three different modes of instruction – face-to-face, online, and hybrid – in the context of foreign language teaching and learning, especially for the delivery of English Grammar, is critical, as little is understood about the merit of each of the above delivery formats in this particular context.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter outlines how this study was designed and conducted, including information on the participants, research objectives and research questions, definition of terms, research design, instrumentation, procedure, provision of support, online learning tools, data collection method, and data analysis.

3.1 Participants

The study cohorts consisted of 165 fulltime EFL learners enrolled at the English Study Program, Language and Arts Department, Faculty of Education, Haluoleo University in Indonesia, taking English Grammar I. The 165 students were divided into three groups by the study program management – group one, group two, and group three respectively – prior to the study. Two different methods were employed by the study program management in assigning the students into one of the above groups.

Firstly, for those enrolled in 2007, the following procedure applied: students whose registration number fell within a range of one to fifty-five were assigned to group one, fifty-six to one hundred and ten to group two, and one hundred and eleven to one hundred and fifty-seven to group three. However, since not every student enrolled in 2007 took the unit in that semester, the number of students in group one, for example, did not total fifty-five as expected. This was also the case with groups two and three.

Prior to the commencement of the semester, after the study program management had assigned students into a particular group, all students in these three groups were informed that they could withdraw from or transfer to a certain class without having to provide a justification concerning their decision, and that this would not have any consequence at all on their final course grades. However, over the whole semester, none of the students enrolled in 2007 withdrew from, or requested a transfer to, any other group.

Secondly, the students who had enrolled in previous years (either 2005 or 2006) were distributed equally across the three groups (group one, two, and three) by the study program management. Since there were 30 students from this category, ten students were assigned to each group. However, these students were also informed that their participation in the study was voluntary and that they could withdraw from, or transfer to, any group without having to provide a justification concerning their decision. Consequently, prior to the commencement of the new semester, one student from group one and five students from group two requested that they be transferred to group three. Thus, at the beginning of the semester, there were fifty-eight students in group one, fifty-one in group two, and fifty-six in group three, as depicted in the following table:

Table 1. Participants

Number of students across the three groups					
Group One		Group Two		Group Three	
2007	Non-2007	2007	Non-2007	2007	Non-2007
49	9	46	5	40	16
Total **58** (M = 15, F = 43)		Total **51** (M = 16, F = 35)		Total **56** (M = 20, F = 36)	

As can be seen from the above table, females were predominant across the three groups. Almost three-quarters of students in group one were female, whereas in groups two and three females constituted nearly 70% of the total.

3.2 Research Objectives and Research Questions

The objectives of the study were three-fold: firstly, to compare students' general impressions of, and attitudes to, the three very different modes of instruction (face-to-face, online, and hybrid instructions) for teaching English Grammar; secondly, to examine similarities and differences in students' responses concerning the perceived benefits and drawbacks of each of the three different modes of instruction mentioned above, and to enalyse themes commonly shared and those distinctive to a particular mode; and, thirdly, to examine the effectiveness of the above three different modes of instruction in the teaching of English Grammar in terms of students' learning outcomes as indicated by their

pre- and post-test scores. Based on the objectives stated above, the following research questions guided the study:

1. What are students' general impressions of, and attitudes to, their first Web-based course in the teaching/learning of English Grammar?
   a. What are the perceived advantages and disadvantages/drawbacks of such a learning environment? Do the advantages outweigh the disadvantages?
   b. Given students' overall evaluation, what is the potential/viability of Web-based courses for these students?

2. What are students' general impressions of and attitudes to their first hybrid course in the teaching/learning of English Grammar?
   a. What are the perceived advantages and disadvantages/drawbacks of such a learning environment? Do the advantages outweigh the disadvantages?
   b. Given students' overall evaluation, what is the potential/viability of hybrid courses for these students?

3. What are students' general impressions of and attitudes to traditional face-to-face instruction in the teaching/learning of English Grammar?
   a. What are the perceived advantages and disadvantages/drawbacks of such a learning environment? Do the advantages outweigh the disadvantages?
   b. Given students' overall evaluation, what is the potential/viability of face-to-face instruction for these students?

4. How similar/different are students' responses concerning the benefits and drawbacks of each of the three different modes of instruction: traditional face-to-face, online and hybrid? What themes are commonly shared and what themes are distinctive to a particular mode?

5. How effective is Web-based compared to traditional face-to-face and hybrid instruction in the teaching of English Grammar in the EFL context?
   a. Do students' grammar test scores change as a result of attending one of the three different modes of instructions – Web-based, traditional face-to-face, and hybrid instructions – over the course of the semester? If they do, how do they change?
   b. How does mode of instruction (group) affect students' grammar test scores?

3.3 Definition of Terms

A number of terms employed in the present study need to be defined:

1. The term "Web-based learning" or "online learning" has been used to refer to an instructional design in which case course delivery relies on the Web.

2. The term "hybrid learning" refers to an instructional design where a combination of Web-based and face-to-face instruction is used to deliver course materials.

3. Face-to-face instruction refers to an instructional design where students and the teacher meet in a traditional face-to-face classroom.

3.4 Research Design

The present study employed a mixed-method design, using both qualitative and quantitative approaches. The qualitative approach was aimed at examining students' learning experiences as a result of attending a given format (i.e. face-to-face, online, or hybrid). By contrast, the quantitative approach was aimed at examining students' learning outcomes after attending one of the modes of instructions mentioned above. This involved both within- and between-group comparisons. The within-group comparison was aimed at examining possible differences in students' pre- and post-test scores, while the between-group comparison was aimed at comparing the post-test scores of the three groups by holding constant the pre-existing differences in the pre-test scores. This way, the effect of the group on students' learning outcomes was able to be demonstrated.

A mixed-method design, which combines both qualitative and quantitative methods in the data analysis, has been widely recommended (Foss & Ellefsen 2002; Rossman & Wilson 1985; Sandelowski 2000). This research approach is also known as triangulation, where both qualitative and quantitative data are used to understand a phenomenon under investigation. Use of both qualitative and quantitative approaches can paint a more complete picture than using only one approach. In other words, a combination of both qualitative and quantitative methods can "improve the analytic power" of a study (Sandelowski 2000 p. 246). Similarly, Rossman & Wilson (1985 p. 627) argue that "either method can be used at the analysis stage to corroborate *(provide convergence in findings),*

elaborate *(provide richness and detail)*, *or* initiate *(offer new interpretations)*
findings from the other method" (emphasis in the original). In the present study,
the qualitative data are useful because they reveal students' experiences when
attending one of the three modes of instruction; they are useful for understanding
what students feel and think about a given learning environment. Similarly,
quantitative data are also useful, for they provide us with an understanding of
students' actual performance. Thus, use of a mixed-method design in the present
study enables an understanding of what the students say about their learning
experiences in a given learning environment, and also insight into how they
actually perform in such an environment. Such a research approach provides a
better understanding of the effectiveness of technology-enhanced teaching
techniques relative to conventional face-to-face classroom instruction because it
takes into account both students' experiences and their learning outcomes.

3.5 Instrumentation

The present study employed three different types of instrument: (a) academic
achievement test, (b) students' reflections on their learning experience, and (c)
follow-up interviews with some of the participants to validate the data.

The academic achievement test – the grammar test – was designed to
gauge students' mastery of course materials (English Grammar). The test was
administered on two different occasions: at the beginning and at the end of the
semester. This enabled both within and between-group comparisons. Additionally,
at the end of the semester, students were asked to reflect on their learning
experience in writing over the course of the semester[14]. Unlike most of the
previous studies that employed such a single statement as "Overall, I am satisfied
with the quality of this unit" when examining students' evaluation of the unit, the
present study employed students' open responses instead. Whilst using a single
statement as mentioned above could provide researchers with straightforward
information, it would omit many important aspects of students' learning
experiences.

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[14] Participants were assured that their comments would be made confidential and that they would
not have any impact on their grades.

Merisotis and Phipps (1999, as cited in Bata-Jones & Avery 2004) note that the weaknesses of previous studies examining the effectiveness of online learning was that, in most cases, instruments employed in these studies were not checked for validity and reliability – two aspects critical in test development. Consequently, the subsequent findings of some of these studies, according to these authors, are questionable. The instrument employed in the present study, particularly the academic achievement test measuring students' learning outcomes, underwent both validity and reliability testing, the process of which will be discussed below.

The first step in developing the grammar test was item generation. Sixty-four items were generated to measure the two aspects of English grammar: Tenses and Parts of Speech. The draft test was then subjected to a content validity assessment. This process is crucial to ensure that both instructions and test items are all clear and unambiguous and that all test items measure what they are purported to measure. An approach recommended by Polit *et al* (2007) and DeVellis (2003), which had been used extensively in scale development research, was employed in assessing the content validity of the grammar test used in the present study. In this approach, experts or people who have extensive experience in the field were recruited to form a panel to evaluate the relevance of each test item against the objective of the test, i.e. measuring students' mastery of the two aspects of English grammar mentioned above, as well as to judge the clarity of each item of the test (DeVellis 2003). The results of their ratings were then calculated to obtain the values for the 'item level content validity index' (herein after I-CVI), and 'scale level content validity index' (herein after S-CVI) (Polit, Beck & Owen 2007). The I-CVI indicates the content validity of a given item in the test, whereas the S-CVI shows the content validity of the overall test. The values for both the I-CVI and the S-CVI range from 0 to 1, with 0 indicating low and 1 high content validity.

The I-CVI is obtained by calculating the number of judges who rate a given test item as highly relevant, divided by the total number of judges (Polit, Beck & Owen 2007). For example, if three judges all rate item #1 in the test as highly relevant, then the I-CVI for that test item would be three divided by three

equals 1, indicating a highly content-valid item. If, however, only two out of three judges are in total agreement, then the I-CVI for that item would be two divided by three or 0.66, indicating moderate content validity. In comparison, the S-CVI is obtained by adding together the I-CVI scores divided by the total number of test items. Thus, for example, the S-CVI for a four-item test whose I-CVI scores are 1.00 (item 1), 1.00 (item 2), 1.00 (item 3), and .68 (item 4) respectively would be one plus one plus one plus .68 divided by 4, which equals 0.92. Polit *et al* (2007) recommended a minimum S-CVI of .80 with S-CVI of .90 or higher being more preferable. As for the I-CVI, a minimum cut-off of .78 is considered acceptable, but higher I-CVI scores would be highly sought after.

In the present study a panel, which consisted of three colleagues who have extensive experience in the teaching of English Grammar in the department, was recruited to judge the extent to which the sixty-four test items that had been generated matched the objective of the test (i.e. measuring students' mastery of Tenses and the Parts of Speech). The panel was provided with sheets of paper containing the 64 test items to be evaluated, along with detailed instructions concerning their task[15]. On the right hand side of each test item, there is a column providing a brief explanation as to what specific content area a given item purports to measure (for example, simple present tense, noun, etc.). Then, again, on the right hand side of this column, there are another five columns labelled 5, 4, 3, 2, and 1 respectively. The panel was to judge the relevance of all items in the test by placing a tick (✓) in the box provided under 5 (if a given test item is considered very relevant), 4 (if a given test item is considered relevant), 3 (if not sure), 2 (if a given test item is considered irrelevant), and 1 (if a given test item is considered not relevant at all).

Additionally, the panel was also requested to comment on the clarity of test instructions (which was provided in a separate sheet) and test items in general. Prior to evaluating the test, however, the objectives of the test being developed were all explained carefully and clearly to the panel until they all understood the task. Having understood their task, each of the members of the panel evaluated the

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[15] For the sake of convenience, the instructions for the evaluation sheet were written in Indonesian.

test independently in their own time and submitted their evaluation at their convenience[16].

The results of the evaluation of the 64 items of the test suggest that, in most cases, the panel considered the items to be very relevant, considering the objective of the test. Only in two items was complete agreement unable to be reached – item 8 and item 45. Item 8 was designed to measure students' knowledge of English present continuous tense. However, it was felt by the judges that the item was more concerned with subject-verb agreement, rather than with present continuous tense. Consequently, none of the judges considered the item as very relevant; one considered the item relevant, and 2 considered the item irrelevant. Thus, the I-CVI score for item 8 equals 0.33, indicating low content validity. Similarly, for item 45, the panel was of the opinion that the options provided were ambiguous, as more than one answer was possible. Accordingly, two of the judges rated this item as 'not sure', whereas the other one believed that it was irrelevant. Thus, the I-CVI score for this item is 0.00, indicating poor content validity. Based on the results of the judges' evaluation, the above two items were removed from the test, leaving only 62 items.

Since all judges were of the opinion that the 62 test items were very relevant, both the I-CVI and the S-CVI scores equal 1.00, indicating high content validity (Polit, Beck & Owen 2007). When asked to comment on the clarity of instructions and test items, the judges were of the opinion that both the instructions and the items were all clear. Thus, at this stage, no necessary changes were made to the draft test apart from removing the two items whose I-CVI and S-CVI scores were very low.

Having undergone content validity assessment by the panel, the revised version of the test was then piloted with a convenient sample of 35 students. The main objective of this exercise was to further test the clarity of the test instructions, as well as of the test items themselves, rather than to obtain responses for statistical analyses. Students recruited for this exercise were asked to comment on the clarity of the instructions of the test as well as of the test items.

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[16] However, a due date for evaluation submission was agreed with the panel.

These students indicated that the instruction of the test and the test items were all clear and understandable. Thus, again, at this stage, no necessary changes were made to the draft test.

Having confirmed that the test to be developed was content-valid and that no ambiguities were found in both instructions and test items, the next step was to examine its reliability. To do this, the instrument was field-tested with a larger number of students from another cohort. As many as seventy-two[17] students from the non-targeted cohort were recruited for the field-testing. These students did the test and the suggested time was forty-five minutes. After the suggested time had elapsed, the students' work was collected for further analyses.

In the present study, test reliability was analysed using the split-half model measuring inter-item consistency. Test items were split into two parts: even (2, 4, 6, 8, etc.) and odd numbers (1, 3, 5, 7, etc.), resulting in 31 items for the odd number category, and another 31 items for the even number category (since the test consisted of 62 items). Test reliability was obtained through a correlation between the two halves and was analysed using the Statistical Packages for Social Sciences computer software program version 16. Researchers generally agree that the minimum alpha required for a test to be considered reliable is 0.7 (Feldmann *et al.* 2007; Nunnally 1978; Swailes & McIntyre-Bhatty 2002; Wells & Wollack 2003) with higher alpha indicating higher reliability.

The results of the statistical analysis suggest that test reliability, obtained through a correlation between forms, equals .828 indicating very good reliability[18] (Nunnally & Bernstein 1994). It can be concluded then that the academic achievement test developed to measure students' mastery of the two aspects of English grammar – Tenses and Parts of Speech – used for the purpose of the present study, is both content-valid and reliable. Its release is, therefore, empirically justifiable.

Furthermore, students' reflections on their learning experience were obtained by asking the students to write down their comments on the class they

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[17] Actually, there were more than one hundred students in the class, but many of them were absent on the day of test administration.
[18] See Appendix 1 for further details.

attended that semester on a sheet of paper. The instruction reads "Please write down your comments about the Grammar I class you attended this semester. Please be as frank as possible in your comments. Thank you". In addition to the written reflections, fifteen students were also selected for an interview and this interview was recorded. The general questions for the interview are as follws: (a) What is your general impression of the class you attended this semester? (b) What you like/don't like and Why? (c) In your opinion, what is the advantage and disadvantage of the class you attended this semester? Further questions were asked, when necessary, based on students' responses.

3.6 Procedure

As stated previously, participants were divided into three groups. Group one attended Web-based, group two hybrid, and group three conventional face-to-face classroom instruction. Each group attended only one mode of delivery over a period of one semester. Course materials, assignments, quizzes, and tests across the three groups were made as identical as possible. All three groups sat for paper-and-pencil tests comprising pre-test and post-test evaluations administered at the same time in the same venue. The pre-test was aimed at gauging students' entry performance, while the post-test was aimed at examining students' performance as a result of attending one of the three modes of instruction over the course of the semester.

Prior to the beginning of the semester, a briefing was conducted with participants attending web-based and hybrid instructions. Conducted separately, the purpose of this briefing was to inform the participants of how courses ran, to check their familiarity with the Internet, and to inform them of what was expected of them. Following this briefing, a number of Internet sessions were organised for those who were not confident about their computer literacy. Previous studies have shown that it is necessary that students be trained before employing computer-mediated communication for sharing ideas (Tu 2000).

Group one (Web-based) never met the instructor face-to-face over a period of one semester (except for tests conducted simultaneously for the three groups).

Consultation and discussions with the instructor were conducted entirely online[19] using both synchronous and asynchronous communication. Topics for class discussion were posted on a weekly basis to the home page and students could either use synchronous or asynchronous communication to discuss the topic. In most cases, the instructor observed the discussion and only participated when necessary. In comparison, group two (hybrid) attended face-to-face classes for the following activities: review of previous course materials, introduction to forthcoming materials, question and answer (consultation), and discussion. These activities only took half of the total allocated time (i.e one and half hour out of a total of three hours). Outside the classroom, hybrid group accessed the Web to access course materials, further discuss and share ideas using bulletin board, chatting, e-mailing, and doing online quizzes. Finally, group three (traditional face-to-face teaching) met once a week in a regular classroom with the instructor. The activities in the face-to-face classroom include lecture (tutor presentation), small group discussion and presentation, class discussion, and paper-based quizzes. Each face-to-face session lasted three hours.

A comparison of the learning activities across the three groups is summarised in the following table:

Table 2. Students' activities across the three different formats

Mode of Delivery	Activities	Allocated Time
Face-to-face	Lecture (tutor presentation)	3 hours
	Small group discussion and presentation	
	Class discussion	
	Quizzes	
Online	Accessing online materials	No time allocation
	Chatting	
	Bulletin board discussion	
	Emailing	
	Online quizzes	

[19] However, some students came and met the instructor in the office to discuss technical problems facing them when trying to access the Web.

Hybrid	**Face-to-face component:**	1.5 hours
	Review of previous course materials	
	Introduction to forthcoming materials	
	Question and Answer (consultation)	
	Discussion	
	Online component:	No time allocation
	Accessing online materials	
	Chatting	
	Bulletin board discussion	
	E-mailing	
	Online quizzes	

It is worth noting that the instructional design for the present study, which placed a strong emphasis on both individual endeavour and social interaction for knowledge construction, was developed from the constructivist learning theory, including both cognitive constructivism and sociocultural constructivism. As discussed in Chapter 2, Cognitive Constructivism views learning as an individual endeavour, in which case each person constructs meaning based on his/her existing schema. Students' activities that reflect on this theoretical framework include reading course materials and doing quizzes, where students can construct a new meaning individually based on their reading and problems set in quizzes or based simply on their experience during social interaction with other members of the classroom community. It is through these activities that the so-called 'assimilation' and 'accommodation' can take place. In comparison, Sociocultural Constructivism views learning as a social endeavour, in which case social interaction is regarded as both a means to an end and an end in itself. Within this perspective, students learn by interacting with one another and this interaction itself is regraded as learning. Students' activities that reflect on this theoretical framework include small group discussion, class discussion, discussion in forums, chatting, and emailing (see section §2.1.1 for further discussion of constructivist learning theory).

3.7 Course Materials Development and the Instructor

As mentioned earlier, course materials used across the three different cohorts are identical; the only difference lies in the format (printed and electronic). These course materials were obtained from various professional EFL/ESL Websites with some minor modifications made (i.e. inclusion of quizzes at the end of each topic), tailored to the objective of the study. Prior to using these materials, a written approval for using these materials was sought from the copyright holder. These materials were not used until a written approval has been formally granted.

As for the instructor, the course was taught by a senior male lecturer, having an experience of teaching the subject for more than twenty years, and the researcher. Whereas the researcher was involved in teaching and providing feedback to the participants, he was not involved in the marking of students' work to avoid bias both in the marking and in students' responses to interview questions asked by the researcher.

3.8 Provision of Support

In the present study, provision of support for students attending online and hybrid formats was conducted via e-mail, bulletin boards, and chatrooms. Participants were also welcome to come and see the instructors in person. However, over the whole semester, only two participants from the Web-based group came to see the instructor to discuss software requirements in order to participate in the chat room. As for participants in the hybrid group, they preferred direct consultation with the teacher during face-to-face sessions.

3.9 Online Learning Tools

Any design of online learning should enable student-to-student and student-to-teacher communication (Thurston 2005). In the present study, communication among the students, and between the students and the instructors, relied on both synchronous (chatting) and asynchronous communication (e-mail and bulletin boards). Chatrooms were generally used for group work (i.e. discussing group tasks, working in pairs, etc.) whereas the bulletin board was used for posting questions or comments or for discussing course materials in general. These tools

enabled the students to communicate with one another any time, anywhere (Hew & Cheung 2003). The web-site for the teaching of English Grammar I was designed in such a way that students could post comments, and ask or answer questions from other students both synchronously and asynchronously. The homepage of the Web-site appeared as follows:

Figure 1. The homepage of the Web-site
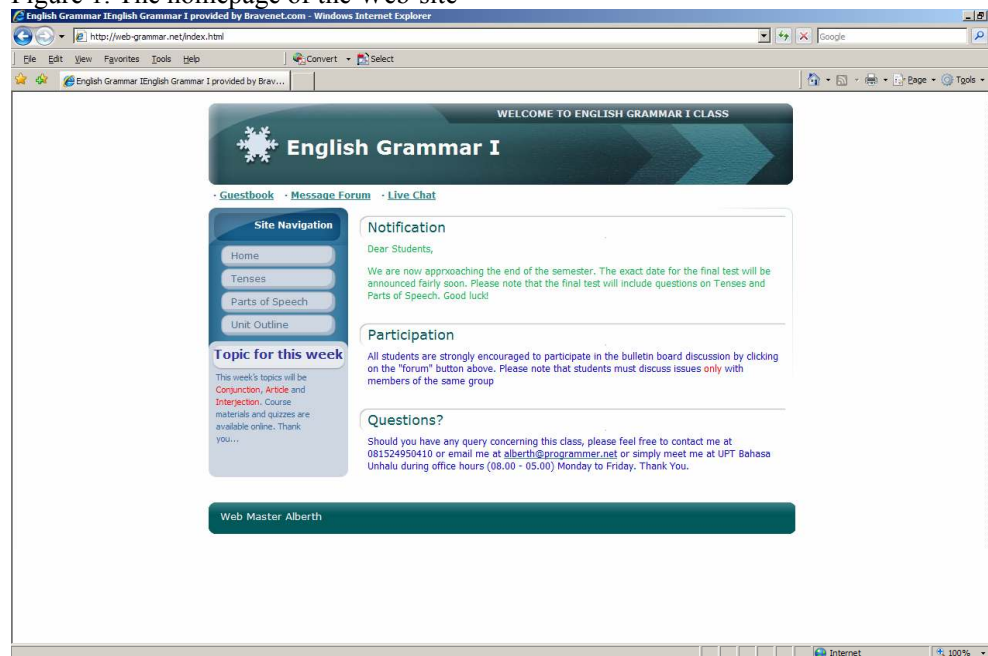
On the left hand side, there were five buttons including 'Home', 'Tenses', 'Parts of Speech', 'Unit Outline', and 'Topic for this week'. Students can return to the homepage by clicking on 'Home'. Similarly, they can access course materials by clicking on either 'Tenses' or 'Parts of Speech'. They can also access course materials by clicking on the 'Unit Outline' and follow the intended link from there. Finally, the 'topic for this week' button is designed to remind students of the topic for a given week. On the right hand side, there were three headings: 'Notification' (to put announcements on the Web), 'Participation' (to encourage students' participation in the bulletin board discussion and to briefly explain the rule), and 'Question' (to inform the students of how they can contact the teacher should they have any questions or queries concerning the unit).

On top of the page, as can be seen above, there are three buttons: 'Guestbook', 'Message Forum', and 'Live Chat'. The guestbook was used to post general comments on the unit. The forum was used to post questions or comments, while the chatroom was used to synchronously communicate with others. Of the three buttons, forums and chatrooms were the most frequently used by the students to communicate with one another, including with the instructor. The forum appeared as follows:

Figure 2. Sample Examples of Students' Postings in Forums

Students could post comments or answer questions posted by other students by pressing the 'Post" button located at the top of the Message Forum. A form would then appear for them to fill in. Message icons, as well as 'smilies' (emoticons) were added to the forum to enable students to express their emotional feelings using these emoticons. When writing a message, the tool allows the students to customise the appearance of their messages (i.e. font, colour, etc.).

Figure 3. Message Forum
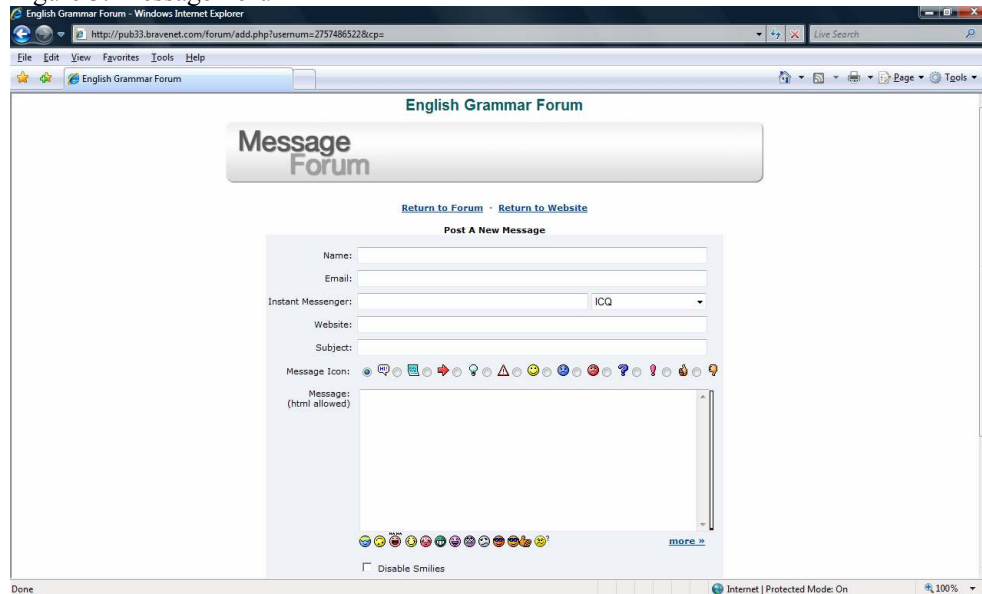
In addition to the forum, as mentioned previously, the Web-site was also equipped with chatrooms where the students could have a live chat or discussion. All they needed to do is to enter their names and profile and press the CHAT button to start chatting. This tool enabled the students to chat with the entire class simultaneously while, at the same time, allowing them to select certain individuals to chat with (i.e. when working in a small group) by clicking on names appearing on the right panel. Thus the system enabled the students to communicate with the whole class, but it also enabled them to discuss issues in a small group, just like what they experience in a face-to-face classroom.

Figure 4. Chatrooms
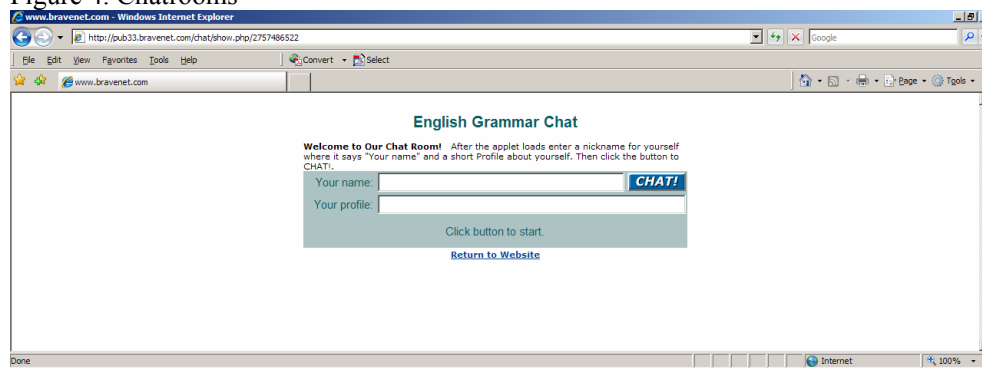
3.10 Data Collection Method

As far as data collection method is concerned, two major issues will be briefly discussed: ethical issues and the data collection procedure.

3.10.1 Human Subject Approval

Prior to conducting the research, Ethics Clearance from the Human Research Ethics Committee, Curtin University of Technology, was sought. Additionally, since the proposed research was conducted with EFL learners at Haluoleo University, approval for conducting such a study was also sought from the ethics committee at Haluoleo University. Most importantly, consent from students participating in the present study had also been gained before the research proceeded, when participants were informed of their rights during the research. This included the right to withdraw from any mode of delivery at any time during the study, and to remain anonymous in the final thesis and in any publication resulting from the study, unless otherwise agreed to by the participants. However, since the researcher was also involved in teaching the subject, participants were informed from the very beginning that the researcher will not be involved in the marking of the exam. In this way, participants are expected to be more frank in their response to questions asked by the researcher, knowing that they responses will not have any implications on their final course grade.

3.10.2 Data Collection Procedure

At the beginning of the semester, all participants sat the pre-test. Students' work was scored by a team (including the researcher). Since the test was in a multiple choice format, the marking of student tests only took a few hours. Students' pre-test scores were then entered into the SPSS computer software program for further analyses. Following the pre-test, students were then divided into three groups and only attended one particular group over the course of the semester. At the end of the semester, all students sat the post-test. The pre- and post-tests were identical. Students' post-test scores were then scored and entered into the SPSS computer software program. Additionally, students were also asked to reflect on their

learning experience over the course of the semester in writing[20]. Their opinions about a particular class they had been attending were sought. Students' responses were then thematically grouped (see section § 3.10.1 below for examples of thematic grouping of responses). Follow-up interviews with a number of students were then conducted to validate the qualitative data (i.e. to clarify statements which were ambiguous or unclear) and to further elicit students' learning experience (including their experience with access to computers/the Internet).

3.11 Data Analysis

The data in the present study are derived from two main sources: (a) students' reflections on their learning experience, and (b) students' learning outcomes as indicated by their pre- and post-test scores. Students' reflections on their learning experience were analysed qualitatively, while their learning outcomes were analysed quantitatively.

3.11.1 Qualitative Data Analysis (Objective #1 and #2)

Students' responses were analysed by means of categorical and thematic analysis (coding system). Students' responses were classified into one of the two coded categories, responses related to either the benefits or the drawbacks (Yang 2001). All comments that fell into the same category (topic/theme) were grouped together, and possible links among themes were also identified and discussed when relevant.

Analysing student responses enables a better understanding of the perceived benefits and drawbacks of each of the three very different modes of instruction from the standpoint of the students. Not only would this provide information concerning the viability of a particular mode of delivery in this context with this student population; it would also help provide a better understanding of the various problems and challenges that may result. Needless to say, understanding these issues would have major implications, theoretically and

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[20] Participants were assured that their comments would remain confidential and that they would not have any impact on their grades.

practically, particularly given the ubiquity of online learning. Below are some examples of how students' responses were thematically grouped:

Table 3. Some examples of thematic grouping of responses

Themes	Comments
Fun/Interesting Learning Experience	Menurut saya, kelas ini benar-benar kelas yang paling asyik, seru, dan berbeda dengan kelas-kelas lainnya. In my opinion, this class was really fun, enjoyable, and really different from other classes.
Interactivity	Dalam forum yang ada di situs, kita bisa saling share bersama teman-teman tentang materi-materi yang kurang dipahami dalam grammar. Tetapi sepanjang mata kuliah ini, hal yang paling berkesan adalah ketika kita saling ber-chatting bersama. In the forum, we could share ideas with classmates regarding course materials that we had not fully understood yet. As far as the unit is concerned, however, the most inspiring moment was when we had a chat with others.
Quality Learning	Proses ini telah banyak memberikan saya pengetahuan tentang ketatabahasaan/grammar secara langsung dan internet secara tidak langsung. This process has directly enabled me to acquire knowledge of grammar and the Internet indirectly.
Enable shy and reluctant students to participate	....terus terang, saya sangat kaget melihat beberapa teman saya yang selama ini segan untuk bertanya, justru di forum mereka lebih aktif dan saya banyak belajar dari jawaban-jawaban mereka yang kritis. ...frankly speaking, I was very surprised to see some of my friends who were normally quiet (reluctant to ask questions) during face-to-face instructions become so active in the forum, and I did learn a lot from their critical responses (postings).
Flexibility/Accessibility	Selain itu, saya juga dapat mengatur waktu pribadi, apabila saya memiliki waktu luang, saya dapat ke warnet untuk belajar sendiri. Misalnya dengan mencoba menjawab kuis-kuis yang disediakan. Besides, I could also plan (arrange) my own time. If I had some spare time, I could go to the internet café to study by myself. For example, by doing quizzes (Yohana Susanta Class A)
Socialisation (Making Friends)	Saya merasa belajar lewat jalur internet itu menarik karena membuatku lebih akrab dengan teman-teman… I think learning via the Internet is interesting because it made me feel even closer to my friends…
Course Satisfaction	Secara keseluruhan, saya sangat puas dengan mata kuliah ini… Overall, I am very satisfied (happy) with the quality of this unit.
Time Efficiency	Selain dapat mengefisienkan waktu pembelajaran, cara ini juga secara tidak langsung membiasakan kita untuk menggunakan internet. Besides making studying time more efficient, this method indirectly made us accustomed to using the Internet.
Gain Self-Confidence in	…this subject also make me confidence when I do communication with every English student. As like that I more trigger for study

Communication	English Grammar.
	…this subject has also made me more confident in communicating with other students at the English Department. That way, I have become more motivated to study English Grammar.
Teacher Immediacy	Dosen juga sering bercanda dalam membawakan materi, sehingga kami yang tadinya tegang menjadi santai, kami sangat senang mempelajari Grammar…
	The lecturer also made jokes in his teaching. We were originally tense (nervous), but owing to his jokes/humours, we became relaxed. We really enjoyed learning Grammar…
Classroom Community	Hubungan kami sesama mahasiswapun selalu baik. Kami selalu saling membantu dalam hal pelajaran. Satu dan yang lain saling mendukung.
	We always had a good relationship with other students (in the class). We always helped each other in our learning. Students supported one another.

3.11.2 Quantitative Data Analysis (Objective #3)

In addition to qualitative data, quantitative data were also sought to gauge the effectiveness of the three different modes of instruction being examined in the present study. While qualitative data indicate students' general feelings about, and attitude to a particular mode, quantitative data indicate their actual learning outcomes as a result of attending that particular mode of instruction.

Quantitative data analyses involve comparing students' test scores. This involved both within- and between-group comparisons. A within-group comparison (i.e. pre-test group 1 ↔ post-test group 1, pre-test group 2 ↔ post-test group 2, pre-test group 3↔ post-test group 3) is important so that each group's performance prior to and after attending a given mode of instruction over the course of the semester could be compared. A statistical analysis of paired samples t-test was conducted to test whether or not pre-test scores are significantly different from post-test scores. By the same token, a between-group comparison on post-test scores was necessary to examine the effect of mode of instructions (group) on students' learning outcomes (grammar test scores). A one-way between-group analysis of covariance (ANCOVA) was conducted to compare the effects of the three different modes of instructions (group) on students' post-test grammar scores. In this analysis, students' post-test scores were used as the dependent variable and the group as the independent variable or factor, whereas the pre-test scores were used as the covariate. By using the pre-test scores as the

covariate, possible pre-existing differences in the pre-test scores could be controlled and, therefore, the effect of group (modes of instructions) on post-test scores could be demonstrated (Tabachnick & Fidell 1989).

3.12 Chapter Summary

This chapter has outlined how this study was designed and conducted. It has also provided information on the participants, research objectives and research questions, research design, instrumentation, procedure, online learning tools employed in the present study, data collection method, and data analysis. Most importantly, it has also provided the rationale for the use of both qualitative and quantitative approaches in trying to understand the effectiveness of new technologies compared to conventional face-to-face classroom instruction. It emphasised that use of qualitative and quantitative data is crucial, for they can paint a more complete picture than using only one approach.

The next chapter, Chapter 4, will present the findings and analysis of the present study, including qualitative and quantitative findings.

CHAPTER 4

FINDINGS AND ANALYSES

Two different types of findings will be reported here: (a) findings from qualitative data and (b) findings from quantitative data. The former concerns student responses with regard to their learning experience as a result of attending one of the three different modes of instruction: conventional face-to-face classroom, online, and hybrid instruction over the course of the semester. The latter concerns student performance as indicated by their pre- and post-test scores. Qualitative findings will be discussed first, followed immediately by quantitative findings.

4.1 Findings from Qualitative Data

Prior to the end of the semester, participants across the three groups were asked to reflect on their own learning experience[21] over the course of the semester. The qualitative data presented, analysed, and discussed in this chapter stems from students' reflections and comments regarding the particular class they attended.

Analysing student responses will enable us to better understand the perceived benefits and drawbacks of each of the three very different modes of instruction mentioned above from the standpoint of the students. Not only will this provide us with information concerning the viability of a particular mode of delivery in this context with this student population, it will also help us to better understand various problems and challenges that may result. Needless to say, understanding these issues will have major implications, theoretically and practically, particularly given the ubiquity of online learning.

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[21] Participants were assured that their comments would remain confidential and that they would not have any impact on their grades.

4.1.1 Research Question #1: What are students' general impressions of, and attitudes to, their first Web-based course in the teaching/learning of English Grammar?

    a. What are the perceived advantages and disadvantages/drawbacks of such learning environments?

    b. Do the advantages outweigh the disadvantages?

    c. Given students' overall evaluation, what is the potential/viability of Web-based courses for these students?

One of the most important factors affecting the effectiveness of online learning, particularly as far as higher education is concerned, is students' perceptions of, and attitudes to, such a learning environment (Poon, Low & Young 2004). It is particularly important in this study since it was the students' first online learning experience.

The following section will report on students' general evaluation of their Web-based learning experience so that the viability and potential of Web-based course offerings for this student population can be examined. As mentioned previously in Chapter 3, students' comments will be analysed descriptively by identifying emerging topics/themes. All comments that fall into the same category (topic/theme) will be grouped together and the frequency of the emergence of such themes will be shown. Possible links among themes will also be identified and discussed when relevant.

To begin with, students' comments can generally be broken down into three major themes/topics: (a) comments regarding their positive learning experience, (b) comments regarding the drawbacks of such a method, and (c) suggestions or recommendations. Comments regarding the advantages of Web-based course offerings will be discussed first, followed immediately by comments on the disadvantages and suggestions. Finally, the prospect of Web-based course offerings for these student populations will be critically evaluated and discussed in light of their reflections on all three areas.

4.1.1.1 Perceived Advantages of Web-based Instruction

As far as the students are concerned, the benefits of online learning, as they experienced it firsthand (frequency of total reported advantages = 101), can be broken down into several categories, from the most to the least frequently mentioned, including:

    (a) fun/interesting learning experience

    (b) gaining computer literacy

    (c) interactivity

    (d) opportunity for self-testing

    (e) quality learning

    (f) enabling of shy and reluctant students to participate

    (g) flexibility

    (h) no face-to-face meeting required

    (i) socialisation (making friendships)

    (j) easy access to course materials and

    (k) absence of noise

4.1.1.1.1 Fun/Interesting Learning Experience

The most frequently reported advantage of Web-based instruction in the present study is the engaging or fun dimension of the learning experience (frequency of reported advantages: 29). This finding came as a surprise given the fact that it was the first time that these students were exposed to such a learning environment and that some students had minimal computer literacy prior to the commencement of the new semester.

Interestingly, whilst some students were quite pessimistic at the beginning of the semester concerning how they would cope with learning without the physical presence of the teacher, a finding identical to that of previous studies (Perez-Prado & Thirunanrayanan 2002; Rivera & Rice 2002), these students ended up enjoying their new learning experience. Many of them used expressions like "fun" and "interesting". On this, one student commented:

> Awalnya, saya agak pesimis dengan metode yang ditawarkan dosen grammar kami… Ternyata sangat mengasyikan belajar via internet (A#19[22]).
>
> I was originally rather pessimistic about the learning method introduced by our grammar teacher… It turned out that it was fun studying via the Internet.

That the majority of the students were in a state of great uncertainty at the beginning of the semester is understandable given the fact that it was their first experience with online learning and that some students just did not have sound computer literacy in the first place. Consequently, they started the course with great reluctance. However, they later found that Web-based learning was, in fact, interesting and enjoyable. Another student made a similar comment describing her uncertainty at the beginning of the semester when she wrote:

> Pada awal model pembelajaran seperti ini diberikan, jujur saya merasa ragu, karena saya pikir saya tidak akan bisa sukses mengikutinya, karena saya rasa sulit jika hanya belajar lewat chatting atau hanya diberika informasi lewat internet saja tanpa berinteraksi lewat tatap muka seperti pelajaran-pelajaran lainnya. Tetapi setelah berjalan beberapa waktu, saya merasa enjoy dan senang dengan cara belajar seperti ini (A#47).
>
> To be honest, at the beginning, I was sceptical as to whether I would be able to successfully keep up with the unit because I found it difficult if I just learned via chatting or was just provided with information on the Internet without face-to-face interactions like those in other units. But as time went by, I came to enjoy this way of learning.

Another student wrote a similar comment reflecting on her doubt prior to taking the unit:

> Awalnya saya ragu dengan proses belajar seperti ini. Tapi setelah saya jalani, ternyata cukup mengasyikan. Saya merasa enjoy berdiskusi dengan teman-teman sekelas saya….(A#9).
>
> I was originally sceptical with this kind of learning process, but after experiencing it, it is, in fact, enjoyable. I enjoyed having discussion with my classmates.

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[22] The symbol A#19 is used to indicate that the student belongs to cohort A number 19

As indicated by the students, one of the things that they enjoyed most, as far as online learning is concerned, was the participating in the bulletin board discussion or chatting with classmates or the teacher[23], a finding similar to that of previous studies (Lee 2004; Perez-Prado & Thirunanrayanan 2002). Throughout the semester, students found the bulletin board (forum) to be a useful tool where they could discuss course materials or share ideas. In fact, many students used the forum to seek help from their classmates or the teacher. It is this experience of give and take that seems to be appreciated by the students – an experience which, in turn, leads to a fun learning experience. On this, one student wrote:

> Fasilitas forum yang digunakan memudahkan kami untuk melakukan diskusi online dengan teman-teman sekelas. Saya merasa lebih enjoy belajar dan berdiskusi dengan teman-teman dan dosen juga tentunya (A#Anonymous).
> The forum (bulletin board) made it easier for us to have online discussion with our classmates. I enjoy learning and discussing things with classmates and, of course, the teacher.

Others particularly reported that the most inspiring experience while taking online classes was chatting with each other using synchronous communication. More importantly, these students also expressed their wish for more online classes in the future. In this respect, one student remarked:

> Hal yang paling berkesan selama mengikuti mata kuliah ini ketika "Chatting". Harapan saya, belajar dengan cara seperti ini tidak hanya berhenti sampai di sini. Belajar dengan cara menarik, santai, tapi serius (A#41).
> The most inspiring moment was when we had a "chat". I hope that this way of learning does not stop here. Learning in an interesting and relaxed, but serious way.

Furthermore, there were also students who reported that it was online quizzes that made their online learning experience enjoyable (see section on 'opportunity for self-testing for more detailed information).

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[23] A further discussion of this issue can be found in the next topic on 'Interactivity'.

Interestingly, or perhaps surprisingly, whilst online learning was considered to be a fun way of learning, one student believed that, in terms of absorbing course materials, she would prefer traditional face-to-face instruction instead. On this, she remarked:

> Secara keseluruhan saya sangat enjoy dengan proses belajar seperti ini karena banyak hal-hal baru yang saya dapatkan, banyak pengetahuan internet yang saya dapatkan, misalnya cara chatting, cara emailan dan lain-lain namun dalam hal penyerapan materi saya kurang maksimal dengan proses pembelajaran seperti ini (A#49).
> Overall, I have enjoyed this learning process very much as I learned many new things, I gained Internet literacy such as how to chat, send emails, etc., but in terms of absorbing course materials, I feel it's less effective for me (compared to traditional face-to-face instruction).

In short, students participating in the present study indicated that online learning was both interesting and enjoyable, particularly owing to the dynamic interactions afforded by the Web, enabling them to stay connected with others throughout the semester. However, although some students did appreciate the benefit offered by online learning and even found it interesting and fun, they did not *necessarily* believe that such a method would be as effective as traditional face-to-face instruction in their learning (further discussion of this issue will be provided in section § 4.1.1.2.1).

4.1.1.1.2 Gaining Computer Literacy

Another frequently reported advantage of online learning is that it provides an opportunity for the students to learn about the computer and particularly the Internet (frequency of reported advantages: 19). It is worth mentioning that, in the present study, students' computer literacy varied from the status of real beginners to expert users. Whilst some students had been using the Internet since they were at junior or senior high school, others had never used the Internet before. It is for this reason, (as recommended by Felix 2001), that training sessions were conducted prior to the commencement of the new semester to ensure that all students would have minimum computer literacy to be able to participate in online

learning. These training sessions were particularly organised for those who either did not have minimum computer literacy required for attending Web-based instructions or were not fully confident in their computer skills. Thus, at the beginning of the semester, all students were expected to be able to create their own e-mail account, participate in the bulletin board discussion, access course materials and chat using synchronous communication.

Given prior computer background of most of the students, it is not particularly surprising that many of them reported to have acquired computer and Internet literacy as a result of taking the unit. On this, one student commented:

> Jujur, saya sama sekali tidak tahu mengenai internet. Tapi setelah belajar grammar saya mendapat pengetahuan yang lebih…dengan metode belajar E-learning, saya mendapat pengetahuan yang lebih tentang teknologi khususnya internet (A#9).
>
> To be honest, I just had no idea what the Internet was about. After attending the (English) Grammar class, however, I gained more knowledge… with E-learning method, I gained more knowledge about technology, particularly the Internet.

A similar comment was made by another student when he wrote:

> Awalnya saya sangat kaku dengan teknologi yang satu ini. Saya tidak mengetahui bagaimana cara mengoperasikannya, seperti cara membuka situs, cara membuat e-mail, cara mengirim e-mail, bagaimana cara chatting dengan orang lain, dsb. Dan pada akhirnya semua itu dapat saya lakukan berkat mata kuliah grammar ini (A#28).
>
> At the beginning, I was very awkward using this technology. I just did not know how to use it; for example, how to open web-sites, how to create e-mail accounts, how to send email, how to chat with other people, etc. Thanks to English Grammar class; at last I can do it now.

The comments made by students concerning the fact that Web-based instructions had enabled them to gain computer literacy is consistent with previous studies conducted elsewhere with different subjects (Ali, Hodson-Carlton & Ryan 2004; Felix 2001, 2004; Montelpare & Williams 2000; Ward & Newlands 1998). It is

worth noting, however, that these results may have been completely different if all participants had had excellent computer skills in the first place.

Interestingly, one student also reported that he now started to use the Internet to search for relevant course materials for other subjects or help him complete assignments for these subjects. The fact that he used the Internet voluntarily suggests that this student had seen an obvious benefit for his learning offered by this technology.

4.1.1.1.3 Interactivity

In this section, another advantage of Web-based instructions – interactivity – will be discussed (frequency of reported advantages = 16). The present study suggests that the Internet is considered to be a medium capable of bridging communication among the students and between the students and the teacher either through synchronous (chat room) or asynchronous (forum and e-mail) communication. These communication facilities enabled the students to share ideas, discuss course materials, ask questions or post comments. On this, one student wrote:

> Materi yang disajikan sangat lengkap dan jika kita menemukan masalah, kita dapat dengan mudah bergabung dalam forum untuk membahasnya bersama yang lain. Disamping itu, kita dapat menolong teman kita dengan memberikan solusi atas pertanyaannya dalam forum. Saya sangat senang ketika kami chatting melalui internet (A#33).
>
> Course materials provided were very comprehensive and should we encounter a problem, we could simply join the forum to discuss the problem with other students. Besides, we could also help others by responding or attending to their problems/questions in the forum. I enjoyed it very much when we had a chat via the internet.

It appears that, as far as the students are concerned, and as discussed in the previous section, forums (bulletin boards) play a vital role in student learning. It serves as a 'place' where they could discuss and share ideas and, most importantly, help one another learn. Previous studies (e.g. Arbaugh 2001) have shown that in a Web-based learning environment, students become less dependent on their teacher. In such circumstances, they would turn to their classmates for

help.[24] These dynamic processes would, in turn, foster interaction and collaboration among the students, thus promoting a sense of classroom community, a finding identical to that of a previous study (Matusov 2005). Students particularly appreciated the importance of forums and chat rooms in their learning:

> Dalam forum yang ada di situs, kita bisa saling share bersama teman-teman tentang materi-materi yang kurang dipahami dalam grammar. Tetapi sepanjang mata kuliah ini, hal yang paling berkesan adalah ketika kita saling ber-chatting bersama. (A#15).
>
> In the forum, we could share ideas with classmates regarding course materials that we had not fully understood yet. As far as the unit is concerned, however, the most inspiring moment was when we had a chat with others.

In fact, as previous studies suggest, understanding "was often built in ways that were not planned but happened spontaneously, such as students guiding the direction of discussion board threads" (Howland & Moore 2002 p. 189). Another student explicitly reported on the role of the forum when it came to seeking help from her classmates:

> Dengan menggunakan media internet dalam kegiatan komunikasi melalui forum, saya merasa banyak terbantu karena pada saat ada yang sata tidak mengerti, dapat langsung ditanyakan melalui forum dan teman-teman pun siap menjawab pertanyaan yang saya ajukan (A#27).
>
> Using the Internet and particularly the forum for communication, I feel it helped me quite a lot because whenever there was something that I did not understand, I could just ask questions in the forum and my classmates were ready to respond to my queries.

It appears that, although students did not 'meet' in a physical classroom, they consistently acknowledged that they enjoyed interacting with one another through the forum and the chat room and, most importantly, they believed that they could always seek help from others whenever they needed it. These reported behaviours

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[24] There were times, however, when teacher's responses were desperately needed, particularly when there were problems that could not be solved by the participants or when there were things which they were not entirely sure about.

(interactions, asking for/offering help, sharing ideas, etc.) further confirm the previous assertion concerning the existence of a community in an online learning environment – a learning community.

4.1.1.1.4 Opportunity for Self-Testing

Another reported benefit of online learning is that students could self-test their mastery of course materials by doing quizzes that accompanied each topic (frequency of reported advantages: 9).

> Selain itu juga dosen memberikan beberapa kuis di setiap materi sehingga ketika kita selesai mempelajari materi tersebut maka kita bisa mengetes sejauh mana kita mengerti materi tersebut dengan mengerjakan kuisnya (A#14).
> Besides, the teacher also provided us with quizzes for each topic. That way, as soon as we finished studying a given topic, we could check our understanding of course materials by doing quizzes.

Some students mentioned that not only did quizzes provide them with an opportunity for self-testing, but they also helped them identify areas where they could potentially make a mistake (and thus needed to work more on).

> Untuk mengetahui seberapa paham kita mengetahui materi, dapat dengan mengisi kuis dan mengetahui dimana letak kesalahan kita (#A22).
> To check our understanding of course materials, we could do quizzes and we could see (right away) in what area we made a mistake.

Interestingly, one student reported that online quizzes positively affected her enjoyment of studying grammar.

> Menjawab Quiz menjadikan saya semakin senang belajar grammar (A#34).
> Doing quizzes made studying grammar more enjoyable for me.

In short, some participants considered online quizzes to be an important aspect in their learning and, for some students, quizzes could serve as a good motivator.

Students' responses to their first online learning experience may have been different if quizzes had not been provided in the first place.

4.1.1.1.5 Quality Learning

Another reported benefit of online learning concerns quality learning (frequency of reported advantages: 7). In particular, participants believed that their knowledge of English Grammar had significantly improved as a result of attending online instruction that semester (this assertion lends strong support from quantitative data analyses of students' pre- and post-test scores where a statistically significant increase in students' post-test scores was noted). One student testified:

> Proses ini telah banyak memberikan saya pengetahuan tentang ketatabahasaan/grammar secara langsung dan internet secara tidak langsung (A#42).
> This process has directly enabled me to acquire the knowledge of grammar and the Internet indirectly.

More interestingly, another student reported that not only had he acquired the knowledge of grammar but, most importantly, he had gained in self-confidence in using the knowledge for real life purposes such as in speaking and writing:

> Awalnya saya sangat ragu dengan kemampuan saya tentang tata bahasa dalam bahasa Inggris. Akibatnya, saya tidak mempunyai rasa percaya diri untuk berbicara/bercakap dan menulis dalam bahasa Inggris, namun setelah saya mempelajari matakuliah ini, akhirnya saya mulai berani untuk berbicara dan menulis dalam bahasa inggris (A#28).
> I was originally uncertain with my knowledge of (ability in) English Grammar. As a result, I just did not have enough confidence to speak (converse) and write in English. After attending this unit, I started to gain this confidence (to write and speak).

This finding is interesting and is worthy of further comment. In particular, what sort of online experience is it that is responsible for boosting students' self-confidence to use the language in writing and speaking in the first place? To begin with, it appears that participating in both synchronous and asynchronous

communication has some positive effect on students' confidence to write in English. For example, some students posted their comments in English (instead of Indonesian) and others replied in English too. Since both sending and replying to postings involved a lot of 'writing in English' (perhaps even more than what the students actually experienced during a writing class), participants gradually started to gain confidence in their own writing skills (particularly when others replied to their messages which, in turn, confirmed that their writing was understood by others, which then encouraged further postings, and so on and so forth). With regard to the increase in students' writing skills as a result of participating in an online instruction, Chenoweth and Murday (2003) argue "…it is possible that the nature of the email and bulletin board assignments provided the online students with the kind of practice that could give them an additional boost in the development of their writing skills" (p. 300 – 301). Blake (2005) also observed that students participating in an online course developed good writing skills and he comments "…that the written language is the primary mode of instruction for online learning may help explain why the online learners do well on written measures…online students pay more attention to written form" (p. 500). Blake's contention appears to be supported by the present study.

Furthermore, echoing findings from previous studies, Fotos (2004) reports that the language use on the internet (e.g. email, chat room, bulletin board) closely resembles the spoken language and that, to send written messages using these facilities actually involves both writing and speaking at the same time. Similarly, drawing on previous studies, Zhao (2005b) concludes that whilst computer-mediated communication relies heavily on writing, it has also lead to improved speaking at the same time. Chenoweth and Murday (2003) also note from previous studies that the type of communication employed in a computer-mediated communication environment resembles speaking and writing. Discussion in a chat room or threaded discussion in the bulletin board could, therefore, be considered as "conversations in slow motion" (Beauvois 1998) – another type of speaking. That the above student also reported an increase in his confidence to speak, in addition to his confidence to write in English, may be attributed to the nature of the interrelationship between writing and speaking in

this environment. In this respect, Yang and Chen (2007) write "the conversational aspect of writing via the network may have helped students to routinize certain expressions, thus promoting the development of automatic structures that assist speaking" (p. 863).

In short, whereas the effectiveness of online learning has been seriously brought into question, particularly given the ubiquity of online courses these days, some students in the present study reported that they had experienced quality learning. This suggests that the potential of online courses cannot be underestimated.

4.1.1.1.6 Enabling Shy and Reluctant Students to Participate

Another interesting comment made by the students concerning their learning experience with Web-based instructions is that of participation. In particular, these students observed that some of their classmates who normally did not participate during traditional face-to-face sessions did, in fact, participate during Web-based instruction sessions (frequency of reported advantages: 6). One student was surprised to see this phenomenon and remarked:

> …..terus terang, saya sangat kaget melihat beberapa teman saya yang selama ini segan untuk bertanya, justru di forum mereka lebih aktif dan saya banyak belajar dari jawaban-jawaban mereka yang kritis (A#1).
> …frankly speaking, I was very surprised to see some of my friends who were normally quiet (reluctant to ask questions) during face-to-face instructions became so active in the forum and I did learn a lot from their critical responses (postings).

Another student reported that whilst she was normally too nervous to ask questions or for clarifications during face-to-face sessions, she found this experience quite the opposite with Web-based learning environment:

> Saya senang karena pertanyaannya tinggal diketik saja tidak perlu gemetaran atau keringatan sebagaimana yang sering terjadi ketika saya bertanya pad kelas ril (A#49).

> I was so happy because I could just type my questions in and was not nervous or sweaty as that always happened to me when I asked questions in a real (traditional face-to-face) classroom.

This finding is consistent with that of previous studies conducted elsewhere (e.g. Ali, Hodson-Carlton & Ryan 2004; Bowman 2001; Sweeney, O'Donoghue & Whitehead 2004) indicating that Web-based learning environments provide a greater opportunity for those who find participating in the face-to-face learning environment daunting or inconvenient. In other words, online discussion encourages those who normally did not participate in face-to-face discussion to contribute or express their opinions (Chun 1994). This is primarily due to the absence of face-to-face interactions which can be intimidating for some students. As far as language learning is concerned, Freiermuth (2001) reported that learners participated more frequently in online environments compared to face-to-face discussion and that they were more comfortable and less anxious in doing that. Gold (2001) reported a similar finding suggesting that "online courses offered more student participation than traditional face-to-face courses, and that online courses have more student-to-student interaction than traditional face-to-face courses" (p. 53).

Another student reported that asking questions in a traditional face-to-face classroom may sometimes result in feelings of embarrassment or being put down, thus losing face. Obviously, 'cultural and social norms' (Freiermuth 2001) could sometimes be detrimental to participation during a face-to-face classroom interaction and this is particularly true for Asian students (Soo & Ngeow 1998). These students did not want to be considered a fool or a slow learner by other students as a result of asking silly questions or making irrelevant points. Consequently, they would normally choose to keep quiet to be on the safe side although they do, in fact, have a serious problem understanding course materials. On this, one student wrote:

> I can asking question without seen by face to face with my friends so I must not felt ashamed if I had mistake (A#51).
> I could ask questions without being seen face-to-face by my friends (classmates). Therefore, I would not be ashamed if I made a mistake.

This comment is particularly interesting and is worthy of further remarks. It was originally thought that the main factor causing the student to feel reluctant to ask questions or to participate was simply to avoid making a mistake or an irrelevant point. It appears that this is not entirely the case. What appears to be the real problem here is that she just did not want to be seen *face-to-face* by others when she made such a mistake. In fact, she considered it all right to make a mistake on the Web, thus feeling free to engage in online discussion knowing that she would not be physically visible by others[25] in case she made a mistake or an irrelevant point. This finding is strikingly similar with that reported by Blake (2005) in his study of Spanish online courses where he reports "online learners also mention that they find it much less stressful to learn language online than in a conversational language class where the potential for *public embarrassment* is greater" (p. 500 emphasis added). If this proves to be the case, Web-based instructions, indeed, have a great potential in promoting equal participation among the students, particularly those who may find classroom environments an 'embarrassing' place for them to experiment with their target language.

Furthermore, another student reported that studying without a face-to-face meeting with the teacher made her more comfortable and relaxed:

> *Ternyata belajar tanpa bertatap muka dengan dosen, malah lebih membuat saya santai dan tidak sulit seperti anggapan pertama saya (A#8).*
> In fact, studying without seeing the teacher face-to-face made me more relaxed and it was not difficult, as I had originally thought.

In short, Web-based instructions appear to be favoured by some students who find traditional face-to-face learning environment to be detrimental to their participation. As previous studies have shown (e.g. Brown 2001), the effect of such variables as gender, age and ethnicity, which appear to affect students' participation in traditional face-to-face classrooms, becomes less relevant in online learning environment. In other words, computer-mediated communication

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[25] Obviously, this phenomenon is worthy of further investigations if we are to better understand the nature of students' participation in both face-to-face and online learning environments.

appears to have an 'equalising effect' when it comes to participation (Jepson 2005). This conclusion is also supported by a more recent study suggesting that online discussion provides 'more equal opportunities for group members to voice their opinions' (Wang & Woo 2007 p. 282). In that respect, the potential of online learning in promoting equal participation among the students is, indeed, quite promising.

4.1.1.1.7 Flexibility/Accessibility

Participants identified Web-based instructions as being flexible, in that they enable them to learn whenever it is convenient for them to do so. Five comments were related to the advantage of Web-based instructions as being flexible. One student made the following comment pertaining to the flexible nature of Web-based learning:

> Selain itu, saya juga dapat mengatur waktu pribadi, apabila saya memiliki waktu luang, saya dapat ke warnet untuk belajar sendiri. Misalnya dengan mencoba menjawab kuis-kuis yang disediakan (A#3).
> Besides, I could also plan (arrange) my own time. If I had some spare time, I could go to the internet café to study by myself. For example, by doing quizzes.

Unlike traditional face-to-face classrooms, web-based instructions do not require a formal timetable; therefore, studying course materials can be done at one's convenience. It is this flexibility of being able to decide 'when' to study that seems to be appreciated by the participants. A similar comment was made by another student where the 'anytime' and 'anywhere' benefit of learning via the Net was particularly highlighted:

> If I wanna study, I just went to warnet to access the web, and I can learn this subject in everytime and everywhere (A#54).
> If I wanted to study, I could just go to the Internet café to access the Web. I could study [this subject] anytime, anywhere.

In addition to providing 'anytime', 'anywhere' flexibility, online learning has also been identified as being flexible (Banas & Emory 1998; Wallace 1996), in that it enables students to learn at their own pace. This means that students could spend more/less time on a particular topic, depending on their own individual needs. In other words, whilst quick learners could skip some of the topics that they had already mastered, slow learners could spend more time on those topics, thus reducing stress from both sides. This is not particularly the case with face-to-face classrooms where all students are expected to learn the same topic in each meeting. On this, one student wrote:

> Umumnya ketika pelajaran dalam kelas terkadang kami harus menyesuaikan diri dengan siswa lain yang belum mengerti sehingga terkadang waktu terbuang sia-sia…Untungnya, dengan metode pembelajaran grammar ini (grammar I) hal tersebut tidak perlu terjadi lagi…Dengan metode ini, setidaknya saya tidak perlu harus membuang waktu suntuk mempelajari pokok-pokok bahasan yang sudah saya ketahui sebelumnya (A#30).
> Generally speaking, in face-to-face classrooms, we sometimes have to put up with students who have not understood the lesson (as they require more explanations from the teacher) and this is sometimes a waste of time…Fortunately, with this learning method, this situation can be avoided… With this method, at least I do not need to waste my time studying topics that I have already mastered.

In short, as far as some of the participants are concerned, Web-based instructions are considered to be an advantageous learning environment as they are more flexible than the traditional face-to-face classrooms. This flexibility can be broadly divided into two categories: (a) flexibility in terms of 'time' and 'place' and (b) flexibility in terms of students learning at their own pace. This finding is consistent with that of the previous studies examining students' learning experience with Web-based learning conducted elsewhere (e.g. Ali, Hodson-Carlton & Ryan 2004; Felix 2001, 2004; Keller & Gernerud 2002; Ku & Lohr 2003; Montelpare & Williams 2000; Poon, Low & Young 2004; Ward & Newlands 1998). It is worth noting, however, that whilst the online learning environment may provide some sort of flexibility, it requires that students be more responsible for, motivated in, and committed to, their own learning. In fact,

previous studies have shown that only self-regulated learners (i.e. learners employing self-regulation strategies in their learning) take full advantage of the flexibility of online courses (e.g. O'Hanlon 2001), whilst those who are not self-regulated might find such courses tedious and daunting, an experience which could further lead to dropout or attrition (see Chapter 2 for further discussion).

4.1.1.1.8 No Face-to-Face Meeting Required

Another reported advantage of Web-based instruction from the standpoint of the learners is that, unlike traditional face-to-face instruction, it does not require face-to-face meetings in a physical classroom (frequency of reported advantages: 4). As one student wrote:

> Saya sangat senang mengikuti mata kuliah ini sebab metode pembelajaran pada mata kuliah ini berbeda dengan mata kuliah yang lainnya yaitu pembelajaran melalui internet sehingga dalam mata kuliah ini kita tidak mesti mengikuti pembelajaran di dalam kelas yang terkadang membosankan…(A#14).
>
> I've enjoyed attending this class because the learning method is quite different from that of the other units, in that, we studied via the Internet. In this case, no face-to-face classroom meetings, which sometimes are dull, are required.

Another student specifically reported that the absence of a physical classroom means that there is no need to meet with the teacher face-to-face[26] when she said:

> …kita tidak perlu repot harus bertatap muka langsung dengan dosen (A#12).
>
> …we did not need to meet the teacher face-to-face.

In other words, Web-based learning is considered convenient by some students primarily because (a) they do not have to come to a face-to-face classroom to study and because (b) they do not need to meet with the teacher face-to-face, a finding consistent with that of previous studies conducted elsewhere (e.g. Felix

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[26] As we shall see later, however, this could, at the same time, be one of the challenges reported by some students, particularly by those who expressed the need for face-to-face sessions with the teacher.

2001, 2004). Previous studies (e.g. Hannay 2006; McNaughton 2001) also suggest that the absence of face-to-face meeting is particularly appreciated by the students who may have other commitments (be it professional or personal) and who may not otherwise be able to come to traditional classrooms. Follow-up interviews with the students suggest that some of them did, in fact, have part-time jobs or other family commitments (i.e. baby sit younger brothers/sisters at home, etc.) the schedule of which may sometimes clash with the campus timetable. Additionally, some of them lived far away from campus and had to travel great distances to attend face-to-face classroom sessions[27]. For these students, the advent of Web-based course offerings, which do not require them to come to campus to study, may prove to be particularly advantageous.

4.1.1.1.9 Socialisation (Making Friends)

Another interesting benefit of online learning reported by some students is that it enabled them to socialise and make friends with others by means of the dynamic interactions afforded by the forum and the chat room (frequency of reported advantages: 3).

> Saya merasa belajar lewat jalur internet itu menarik karena membuatku lebih akrab dengan teman-teman…(A#22).
> I think learning via the Internet is interesting because it made me feel even closer to my friends…

The fact that students could socialise and develop an emotionally close relationship in a virtual learning environment is, in itself, interesting. It appears that frequent online communication and interactions among the students by means of synchronous and asynchronous communication have enabled them to gradually develop an even closer relationship – a process identical to that in traditional face-to-face classrooms. Again, this finding provides further evidence for the existence of a learning community in an online learning environment.

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[27] To make matters worse, access to public transport was not reliable (there were frequent strikes by public transport drivers at the time of the study which resulted in all public transport being non-operational for a few days).

Another student reported that her online communications with her classmates were followed up by face-to-face encounters in campus and testified that this made her even closer than ever with her friends.

> Selama mengikuti mata kuliah ini, saya mendapatkan banyak teman sebab jika saya menjawab pertanyaan atau dijawab pertanyaan saya oleh mahasiswa lainnya maka saya akan meminta penjelasannya secara detail di kampus sehingga teman-teman yang dulu tidak terlalu akrab tetapi setelah perkuliahan ini malah semakin akrab… (A#14).
> Attending this unit, I got lots of friends because whenever I responded to someone's queries or mines were attended to by others in the forum, I would normally seek further detailed explanation when we met face-to-face at uni (for other subjects). Consequently, those who were once not-too-close-friends have now become my close friends.

Thus, it appears that online learning environments do not necessarily result in the feeling of isolation and alienation as was originally believed by many of the opponents of computer-mediated communication (Banas & Emory 1998). Instead, it could turn out to be a dynamic learning environment where students could have meaningful interactions and help one another learn. It is during these processes that a genuine friendship[28] among the students could start to develop. Of course, it is naïve to assume that this dynamic learning environment can be achieved merely by providing the technology. At the end of the day, as discussed in Chapter 2, it is a combination of the technology and sound pedagogy that contributes to a vibrant learning environment.

4.1.1.1.10 Easy Access to Course Materials

Another identified advantage of Web-based instructions from the standpoint of the participants is that it is easy to access course materials (frequency of reported advantages: 2). This low percentage, however, came as a surprise because it was anticipated that easy access to course materials would be more frequently mentioned by the students as one of the advantages of online learning (e.g. Keller & Gernerud 2002). One possible explanation to this phenomenon is that similar

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[28] Although this is not the main purpose of online learning, it is yet another positive outcome.

course materials used with this unit were also easily available and accessible elsewhere: at the university's library, students' library and self access centre[29]. Therefore, given the ubiquity of, and easy access to, these materials, participants tended to be less appreciative of the accessibility of course materials on the Web. Students' responses may have been completely different if these materials had not been easily accessible in their surroundings in the first place. Nonetheless, a small number of students still perceived easy access to course materials as one of the benefits of online learning. One student mentioned that accessing course materials on the Web was quite easy and simple:

> Keuntungannya adalah saya tidak perlu repot-repot mencari handbook karena melalui web, materi yang dibahas sudah disiapkan. Jika saya ingin mempelajarinya lagi, saya tinggal mengcopynya dan bisa saya pelajari kembali di rumah. (A#10).
> The advantage is that I did not need to find the handbook because course materials were readily available on the Web. If I want to review the lesson, all I need to do is copy it (onto a disk) and I could study the lesson at home.

A similar comment concerning easy access to course materials, which is actually still related to the 'flexibility' mentioned in the previous section, was made by another student when she wrote:

> Diantaranya kita dapat mengaksesnya kapan saja…(A#12).
> Among other things, we could access (course materials) anytime…

I have, however, distinguished 'flexibility' from 'easy access to course materials' here, although they are still inter-related. Flexibility, as discussed in the previous section, concerns the choice of 'when' and 'where' *to study*, whereas easy access to course materials specifically concerns 'when' *to access* course materials (not necessarily to study).

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[29] Unfortunately, the present study did not particularly examine how online students actually accessed course materials. Moreover, little information was available on this issue. Perhaps this simply reflected the fact that accessing course materials was not a relevant issue for these students.

4.1.1.1.11 Absence of Noise

The final reported benefit of Web-based instruction, and the least frequently mentioned by the students, is that, unlike traditional face-to-face classrooms, online learning is free from disturbing noise. As one student wrote:

> …belajar lewat internet cukup efisien tidak ribut seperti di ruang kelas (A#53).
> …studying via the Internet is efficient enough – not noisy like face-to-face classrooms.

Whereas this observation was only made by one student, it is, nevertheless, an important finding. It is a clear indication of how students' characteristics affect their perception of an ideal learning environment. Obviously, whilst some students will not have a problem coping with the level of noise in an ordinary classroom, others may find it distracting. For these students, an online learning environment may be seen as an ideal classroom[30]. A good learning environment should, therefore, be capable of accommodating different characteristics and learning styles of the students. The fact that different students may have different sensitivities to noise in a classroom is just one example.

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To sum up, as far as participants in the present study are concerned, Web-based learning offers a wide range of advantages and benefits. The frequency of total reported advantages is 101. These identified advantages can, further, be divided into eleven different, but inter-related themes, as discussed above. Of all these advantages, the most frequently reported is that Web-based learning is interesting, fun and enjoyable. Thus, it appears that participants in the present study value their first Web-based learning experience. However, there were also reports on the drawbacks of this method which will be discussed immediately below.

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[30] However, an online learning environment could also be turned into a noisy environment, just like traditional face-to-face classrooms, if relevant software and hardware are installed, enabling the students to do face-to-face teleconferencing. In other words, with online learning, there is always a choice concerning use of various multimedia technologies.

4.1.1.2 Perceived Disadvantages of Web-based Instruction

The frequency of total reported disadvantages (42), can be broken down into several categories, from the most to the least frequently mentioned:

(a) absence of face-to-face contact

(b) technical problems

(c) lack of computer literacy

(d) lack of teacher's monitoring or supervision

(e) decreased participation overtime

(f) lack of immediate feedback/responses

(g) inadequate facilities (difficult to access a computer)

(h) difficult to tell whether the person on the Net is real and

(i) the potential for non-participation.

4.1.1.2.1 Absence of Face-to-Face Contact

Amongst all the drawbacks of online learning reported by the students, absence of face-to-face instruction is the most frequently mentioned (frequency of reported disadvantages: 13). In general, although participants were not particularly against online learning, they expressed the need for face-to-face sessions where they could listen to a teacher's explanation directly (rather than through synchronous or asynchronous communication facilities provided on the Web). This is how it was put:

> Mata kuliah ini juga menyediakan sarana untuk menyalurkan berbagai masalah yang saya hadapi dalam belajar. Namun, saya terkadang ingin mendengarkan penjelasan langsung dari Bapak (A#20).
> This unit also provided me with facilities through which I could communicate my problems in learning (with the teacher). However, sometimes I just wanted to listen to your (the teacher's) explanations directly (face-to-face).
>
> …saya orang yang lebih suka penjelasan langsung dibandingkan dengan membaca dan mengerti sendiri. Saya hanya tertarik untuk mengikuti kuis dibanding membaca……(A#32).
> …I am the type of person who prefers direct explanation (from the teacher) to reading and understanding (course materials) on my own.

> I'm more interested in doing quizzes than reading course materials online.

> Namun, apabila saya mempunyai masalah dengan mata kuliah ini, saya hanya bisa menyalurkannya lewat tulisan dan jawaban Bapakpun hanya melalui tulisan, tanpa bisa mendengarkan penjelasan dari Bapak…(A#38).
> If, however, I had some problem with course materials, I could communicate the problem (with you/the teacher) only in writing and your responses were also in writing without me being able to directly listen to your explanations.

Another student expressed the need for face-to-face instruction simply because being exposed to a computer screen for a long time negatively affected his concentration, thus his comprehension of course materials. On this he commented:

> Namun yang menjadi kendala bagi saya adalah saya kurang konsentrasi untuk menyerap materi tersebut ketika harus berlama-lama di hadapan computer (A#42).
> The problem for me was that I just could not concentrate to learn (course materials) when sitting too long in front of a computer screen.

Finally, there was also a student who preferred face-to-face instruction simply because she felt that she learned more effectively in a classroom than in an online format. This is how it was put:

> …tapi saya lebih senang apabila saya belajar lewat pertemuan langsung seperti kelas C, karena saya lebih mengingatnya daripada membaca materi saja di layar komputer (A#25).
> …but I would prefer face-to-face instruction just like class C, because I could remember course materials better (in face-to-face classrooms) compared to when I just read them on a computer screen.

This finding indicates just how important students' characteristics and belief in technology are in framing their perceptions of the effectiveness of an online learning environment. Although the Internet and its facets afford communications and interactions among the students and between the students and the teacher, there are always students who would prefer traditional face-to-face instruction, either because there is a sense that something is missing in an online learning

environment (e.g. a teacher's voice, body language, gesture, tone, etc.) or because one feels that one will not learn effectively in such an environment. Indeed, some students will learn more effectively if they interact directly with their teacher and classmates (Beard & Harper 2002).

Evidence suggests that learning styles play a significant role in how students perceive the effectiveness of online learning (e.g. Sauers & Walker 2004) and are, therefore, critical to succeeding in such a learning environment. In other words, students with certain learning styles are more likely to be successful in technology-enhanced learning than those with other learning styles (Terrell 2002). Felix (2004) reported that learning style preference correlates significantly with how students view online learning, in that, "those whose major learning style preference was auditory considered Web-based learning more useful for learning vocabulary than did those with this style as a minor or negligible preference" (p. 245).

In addition to learning styles, such variables as computer literacy, approval of technology (technology acceptance) may also impact upon students' perceptions of online learning, thus their overall perception of how such learning environments may actually help them learn (Keller & Gernerud 2002). Thus, implementation of any online learning program should take these important individual variables into account because it may not be suitable for every student (Rovai 2004). This issue will be re-examined in Chapter 5 where I argue that student characteristics are amongst the critical success factors of online learning.

4.1.1.2.2 Technical Problems

Another reported drawback of online learning is related to technical problems experienced by the students while using the Internet (frequency of reported disadvantages: 6). Although the frequency of the problem reported is not particularly high, it does highlight one of the real challenges for implementing online learning. For example, one participant was concerned about an incredibly slow internet connection from where she was working:

> … when we opened the forum discussion or chatting online, we have to wait till a half hour, it loading was very slow and even when we were joining the forum, suddenly the web was down (A#58).
> When we logged in to the forum or chat room, we had to wait for half an hour; the loading was very slow and even when we had successfully joined the forum, the Web page was suddenly off line.

Another student was particularly concerned about software requirements to access the chat room service[31]which, as she reported, caused some confusion.

> Masalah teknik harusnya dipersiapkan terlebih dahulu, contohnya pada masalah atau kasus java plugin kemarin ini, semestinya dipersiapkan terlebih dahulu agar kami tidak kebingungan pada saat melakukan chatting (A#17).
> Technical problems should be addressed in advance. For example, the problem that we had with java plugs-in the other day (should have well been anticipated) so that we were not puzzled when it came time to log in to the chat room.

Other students were concerned about the compatibility of software and hardware. All these technology-related issues were also reported in previous studies (Ali, Hodson-Carlton & Ryan 2004; Felix 2001; Keller & Gernerud 2002; Ku & Lohr 2003; Montelpare & Williams 2000; Ward & Newlands 1998). Evans *et al.* (2004) have even claimed that most of the identified disadvantages of Web-based instructions are technical in nature. Although the present study indicates that technical issues are, indeed, one of the identified drawbacks of online learning reported by some students, it is not the most common. Nonetheless, technical issues came as the second most frequently reported disadvantage in the present study.

Given this finding and those of the previous studies mentioned above, it appears that technological factors could significantly affect students' perception of online learning, thus its usefulness and effectiveness. It is for this reason that Arbaugh (2000, 2001) highly recommended the use of appropriate technology

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[31] Since some students worked from computers run by old-generation operating systems (where certain features such as java plugs-in were not automatically supported), they needed to install the software manually in order to access certain features of the Web (such as the chat room service).

(both hardware and software). It is, however, sometimes difficult to tell which software works for which hardware until it has been tested.

In short, whilst participants in the present study described technical problems they experienced as one of the drawbacks of online learning, this problem could be effectively addressed in the future by pre-testing all software/hardware prior to using them with the students[32]. That way, possible technical problems such as those reported in the present study could be reduced if not avoided. Unless the technology is highly reliable in the first place, online learning will only prove daunting to some students, particularly those who have very basic computer skills.

4.1.1.2.3 Lack of Computer Literacy

As mentioned previously, participants' computer skills varied greatly and, therefore, training sessions were arranged for those who were either computer illiterate or did not have enough confidence in their computer skills. It was hoped that, prior to the beginning of the semester, all participants would have had minimum computer skills required to use the Internet for their learning. Despite this training, however, some participants did not appear to have acquired the minimum computer literacy as expected. Therefore, it is not surprising that a lack of computer literacy has been identified as one of the drawbacks of online learning (frequency of reported disadvantages: 6). One student expressed his frustration with this method and concluded that he would prefer face-to-face instead of Web-based instructions. This is how it was put:

> Metode ini memberikan banyak duka bagi saya, seperti pernah ke warnet 1 jam tapi, buat email address tidak bisa. Trus setiap kali mau ikut forum tidak bisa. Saya sudah coba tapi tetap tidak bisa, mungkin saya masih awam dalam hal masuk keforum. Jadi, setiap saat tidak bisa timbul rasa malas untuk melakukannya. Jadi kalau dipikir dan dipertimbangkan saya lebih memilih kepada pertemuan face to face balance to internet (A#57).
> This method gave me lots of bitter experience. For example, I once went to the Internet café to create an email account; I spent one hour

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[32] Also, as the student suggested, any potential technical problem should be dealt with in advance.

> without success. Moreover, every time I tried to login to the forum, I never succeeded either. I had tried, but never succeeded – perhaps because I just did not know how (to log in to the forum). As this happened again and again, I started to feel lethargic. Considering this, I would prefer face-to-face to Web-based instructions.

This finding provides evidence as to just how important students' computer literacy is in influencing their perceptions of the effectiveness of online learning. Whilst some students may originally have a positive attitude to such a method, this attitude may turn to be completely negative due to the daunting experiences they may have with this technology. This is particularly true when there is a big gap in students' computer literacy (this is exactly the case with the present study). Discrepancies in computer skills enable some students (with good computer skills) to gain benefits from online learning but, at the same time, cause disadvantages to others (who are lacking such skills). Indeed, previous studies have shown that a gap in computer literacy among the students could be a major problem for the implementation of Web-based instructions (Lee 2004; Montelpare & Williams 2000; Summers, Waigandt & Whittaker 2005).

In short, another critical factor that needs to be seriously considered when implementing online learning is students' computer literacy. As indicated by the present study, lack of computer literacy could negatively affect students' perceptions of online learning. Whilst providing *ad hoc* training may be useful for students who have already acquired some basic computer skills, it does not seem to be very effective for those who did not have previous experience with the computer. For these students, intensive – rather than *ad hoc* – training should be provided before the commencement of any online class.

4.1.1.2.4 Lack of Teacher's Monitoring/Supervision

Another interesting reported drawback of online learning concerns lack of teacher's monitoring/supervision of students' learning activities in such a learning environment (frequency of reported disadvantages: 5). Obviously, in an online learning environment, the teacher cannot physically monitor students' activities. Whilst it is possible to monitor students' activities in the forum and chat room,

there are a number of things which cannot be monitored in such an environment including students' facial expressions, body language, behaviour, tone, etc. Due to these limitations, some students feel that the 'online classroom' is lacking in a teacher's supervision. On this, one student wrote:

> …pembelajaran ini sangat menarik karena ini merupakan pembelajaran baru yang kami terima melalui WEB namun selain itu pembelajaran ini juga mempunyai banyak kekurangan dikarenakan tidak ada pengontrolan langsung dari dosen… (A#48).
> …this learning (method) is very interesting because it was our first Web-based learning experience. However, this method also had some limitations due to the absence of direct monitoring/supervision by the teacher.

Apparently, for some participants, direct supervision by the teacher is necessary. The reason for requiring teacher's direct monitoring may, however, vary from student to student. Some students may demand close monitoring of their learning activities to ensure that they would always be 'on the right track'. Others may, however, do so because they just want to impress their teacher (with the hard work they have done) or simply seek attention in hope of higher grades in return. In fact, there are some students (particularly those who are extrinsically motivated) who will engage in any classroom activity (group discussion, etc.) only if the teacher is there. In the absence of the teacher, they become passive learners. Not surprisingly, this behaviour is also found in an online learning environment. For example, one student remarked:

> Kadang-kadang saya malas datang ke warnet karena menurut saya hal itu tidak dikontrol langsung oleh dosen. Walaupun saya tahu bahwa kami selalu dikontrol melalui forum (A#33).
> Sometimes I just did not feel like going to the Internet café because, in my opinion, it was not closely monitored by the teacher although I knew that we were somehow supervised via the forum.

This finding is interesting and requires further commentary. First of all, it is clear that the absence of face-to-face monitoring has made the student reluctant (unwilling) to go to the Internet café either to access course materials or to engage

in online discussion with classmates. Whilst she is aware that students' participation in the forum is actually supervised, this supervision does not seem to be as important as face-to-face monitoring. Thus, it appears that it is not just an issue of monitoring/supervision that affects students' willingness to participate, but also how such monitoring is conducted. Obviously, further study is required to better understand this issue.

In short, some students in the present study indicated that they needed the teacher's close supervision and monitoring in their learning and that the online learning environment was perceived as lacking such supervision. This perception resulted in some students becoming reluctant to participate or, even worse, not participating at all.

4.1.1.2.5 Decreased Participation Overtime

Another less positive phenomenon reported by the participants based on their experience of taking online learning that semester is that there was a steady decrease in students' participation over time which was perceived by some participants as one of the drawbacks of online learning (frequency of reported disadvantages: 4). Clearly, the first few weeks witnessed a great number of postings and interactive discussions taking place in the chat room. As time went by, however, students' participation in both forum and chat room started to decline. In this respect, one participant remarked:

> Semakin hari forum semakin jarang terisi. (A#11).
> Day by day, less and less postings were found in the forum.

As a result of this decrease in students' participation, one student who originally found the learning process enjoyable and interesting later described it as dull[33]. On this she wrote:

> Tapi sayangnya, kondisi belajar yang mengasyikan itu lambat laun berubah menjadi membosankan. Karena dari hari ke hari minat

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[33] This further confirms a previous assertion that one of the things that the students enjoy, as far as online learning is concerned, is the interactivity (see section § 4.1.1.1.3 for further details).

> teman-teman untuk ke warnet untuk download materi mulai berkurang pula. Mungkin dikarenakan kesubukan-kesibukan lain. (A#19).
> Sadly, the enjoyable learning process gradually came to be dull because, day by day (gradually), students' interest to come to the Internet café to download course materials became attenuated. Perhaps this was due to other demands/activities.

This finding is particularly puzzling, as there is no crystal-clear evidence to explain why this was actually the case. Follow-up interviews with some participants indicated that they had several projects (from other units) that needed to be completed that semester, but it was not entirely clear whether this was, in fact, the main reason for their decreased participation. Interestingly, previous studies (e.g. Matusov 2005) also reported a similar finding, and the researcher speculated that the decrease was due to the fact that students, at the same time, have to cope with the increased demands from other units they took that semester. Interestingly, this speculation is similar to what the students in the present study reported. Obviously, this is an issue which is worthy of further investigation. Unless we know why students' participation declined in the first place, we cannot do anything to sustain their participation. A longitudinal study may be required to address this phenomenon.

4.1.1.2.6 Lack of Immediate Response/Feedback

Despite dynamic interactions afforded by the Web, some students were concerned about a lack of prompt/immediate response from both teacher and classmates (frequency of reported disadvantages: 3). Obviously, when posting a comment or a question in the forum, it would take some time before a reply to such a posting became available and this could particularly be inconvenient or even frustrating for some students who required a prompt reply (see also Wang & Woo 2007). On this, one student remarked:

> Saya memberi tanggapan positif karena disediakannya forum bagi kami, di sana kami bisa berdiskusi bersama-sama memecahkan materi yang kami kurang pahami dengan dosen sebagai pengawas. Namun

> proses di forum ini cukup lama, kami harus menunggu untuk beberapa lama atas pertanyaan kami. (A#42).
> I appreciate the fact that the forum was provided for us where we could discuss course materials that we had not understood with classmates and the teacher as a supervisor. However, this process took a long time; we had to wait for some time before our queries were responded to/attended to.

Apparently, some students expected that teachers would be available online most of the time to provide them with immediate feedback. Perhaps it is these expectations that lead to disappointment and frustrations when immediate feedback is not received. Thus, it is important to make it clear far from the beginning concerning how feedback should be provided and approximately how long it would take to do so. Having this understanding is important so that students could always anticipate and be prepared to receive delayed feedback.

In the present study, although the teacher was also involved in the bulletin board discussion (and chat room), such participation was minimal to encourage greater participation from other students. Therefore, when queries had been properly addressed by others, or when the discussion was already on track, the teacher did not interfere with the discussion (Freiermuth 2001; Moore 2001). Only when no responses or when no appropriate responses to queries were posted did the teacher start to get involved directly. Another student mentioned that it is important for the teacher to provide model answers to their questions by actively participating in the forum. On this, she remarked:

> Namun demikian, satu hal yang masih perlu ditingkatkan lagi adalah keikutsertaan dosen dalam forum sesering mungkin, membantu memberikan jawaban yang sesungguhnya tentang pertanyaan-pertanyaan yang dicantumkan...(A#15).
> However, another aspect that needs to be improved is frequent participation of the teacher in the forum to help provide model answers to questions posted…

Interestingly, this finding is in complete agreement with the findings of previous studies (e.g. Ku & Lohr 2003; Sweeney, O'Donoghue & Whitehead 2004) that have reported on students' frustration as a result of lack of an immediate model

answer or feedback from their teachers. Thus, it appears that for some students, providing 'timely feedback' (Rivera & Rice 2002; Vrasidas & McIsaac 2000) is critical, for example, by confirming whether or not a given response is satisfactory or how it could possibly be improved. Leaving other students to provide feedback to their classmates, without any comment by the teacher – either of approval or disproval – could lead to uncertainty for some students as they may continually wonder whether they have been provided with appropriate feedback by their classmates.

4.1.1.2.7 Inadequate Facilities/Difficult to Access a Computer

Another challenge for online learning reported by some students concerned inadequate facilities or difficulties accessing a computer (frequency of reported disadvantages: 2). In the present study, participants accessed the internet through the university's computer centre or an internet café outside the campus. However, since the university's computers were shared by students from different faculties (in which case the number of the students far outnumbered the number of computers available), these computers were often fully booked. Therefore, some students preferred to go to the internet café outside the campus or to one near where they lived. However, even there, participants still had to queue, sometimes for a long period of time. Every now and then, they just had to move to a different internet café to ensure early access. This is how it was put:

> ...karena saya harus mengantri di warnet berjam-jam sampai harus mencari warnet lainnya demi mempercepat mulai chatting (A#8).
> ...because I had to queue for hours in the internet café and sometimes had to find another internet café so that I could chat as soon as possible.

> Apabila warnet penuh maka saya harus antri sampai ada bilik warnet yang kosong, padahal waktu yang dipakai terbatas (A#25).
> If the internet café was full, I had to wait (queue) until there was a vacant computer; the thing is that we had limited time.

This finding indicates another important challenge for implementing online learning programs – lack of access to computers – a problem that has frequently been reported in previous studies (e.g. Ward & Newlands 1998). Obviously, a reliable access to computers is one of the most important factors in the success of any online learning program. Ideally, every student should have access to at least one reliable computer on campus. Unfortunately, this was not possible at the time of the study. However, whereas access to computers was still a problem, this problem will gradually decline as more reliable computers are provided in the future[34]. Nonetheless, it is desirable to provide all necessary facilities before deciding on implementing any online learning program in the future.

4.1.1.2.8 Difficult to Tell whether an Online Person is 'Real'

Another reported drawback of online learning is that it is difficult to tell whether an online person is actually a 'real' person (frequency of reported disadvantages: 2); in other words, deciding whether a person whose name accompanied each message was actually the person who posted the message in the first place. Two students expressed their concern about the fact that it could well be that someone else posted the message using someone's name or identity. On this, one student remarked:

> …and sometimes we didn't know to whom we were sharing. We just know who his name/her name but we didn't know who they are exactly. Because possibly is not he/she who joined in the forum, may be they ask another one to join in the forum and used id name own…. (A#58).
>
> …and sometimes we just didn't know whom we were actually sharing ideas with (in the forum). Whilst we knew the name (that appeared in the forum), we did not know whether it was really the person (who posted the message in the first place).

One of the undesirable consequences of this suspicion is that it could potentially develop into a feeling of distrust among the students. Without trust, it is difficult, if not impossible, to promote an authentic online learning community. Although

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[34] At the time of the study, more computers were being procured by the university many of which were allocated to each faculty, which is quite promising.

the frequency of such reports is not high, it is yet another important finding highlighting one of the potential challenges for online learning environments – a challenge that every online instructor and Web developer should be aware of.

4.1.1.2.9 Potential for Non-participation

The final and least frequently identified challenge for online learning from the standpoint of the participants (frequency of reported disadvantages: 1), concerns the potential for non-participation by some students. In traditional face-to-face classrooms, it is difficult to get every student actively engaged in classroom activities. In an online learning environment, it is even more difficult. Although a bulletin board and a chat room are provided for the students to discuss and share ideas pertaining to course materials, it cannot be guaranteed that everybody will participate. One student pointed exactly to this challenge when she remarked:

> Belum lagi terkadang tidak bisa dijamin kalau setiap mahasiswa bisa betul-betul aktif berpartisipasi dalam forum (A#40).
> Moreover, sometimes it cannot be guaranteed that every student would be actively participating in the forum.

Whilst online learning environments seem to enable participation of some students who may not otherwise be willing to participate in ordinary face-to-face classrooms, they cannot guarantee that students will all become active participants in these learning environments. It is undeniable that, just like those in traditional face-to-face classrooms, some online students just do not want to participate, the reason for which may have nothing to do with the learning environments.

Non-active participants in online learning may be distinguished into two different types. The first are those who neither contribute to, nor gain anything from dynamic online interactions. These are the 'real' passive learners. The second are those who 'watch' the discussion, thus gaining something from it, but are unwilling to contribute. These students take full advantage of ideas from other students, but never give anything or contribute in return. In some literature, this behaviour is often referred to as 'lurking' (Preece, Nonnecke & Andrews 2004).

Lurking is detrimental to an online learning community as it could promote distrust and suspicion among the students.

To sum up, as far as participants in the present study are concerned, Web-based learning has a number of drawbacks. The frequency of total reported disadvantages is 42. These identified drawbacks can, further, be divided into nine different, but inter-related themes as discussed above. Of all these drawbacks, the most frequently reported is the absence of face-to-face sessions with the teacher.

4.1.1.3 Participants' Suggestions and Recommendations

Participants provided a few suggestions concerning how online learning could be improved. These suggestions could be divided into two broad categories: (a) suggestions for the improvement of the content of the Web, and (b) suggestions for a mix of face-to-face and online learning (hybrid).

To begin with, one participant suggested the inclusion of games and pictures in the Web[35] to make it even more interesting and a fun learning environment. This is how it was put:

> Yang terakhir saya mengharapkan situs ini dibuat lagi semenarik mungkin agar tidak ada kejenuhan ketika mempelajari grammar dalam dunia maya. Seperti tampilan games yang unik dan lucu, ataupun tampilan gambar-gambar yang menarik selayaknya gambar yang ada di acara "English for fun" di TVRI. (A#15).
> Finally, I hope this site could be made more interesting so that we would never get bored when learning in a virtual learning environment. For example, by including unique and fun games or other interesting pictures (visuals) like those found in the "English for fun" program on TVRI (Indonesian National Television).

Indeed, this is sound advice. In fact, some of the most popular ESL/EFL sites currently available on the net are accompanied with a wide range of interactive games and pictures, in addition to quizzes. In the future, there is no reason for not taking this recommendation into account.

Furthermore, some students also recommended a mixture of face-to-face and online learning (hybrid instruction). This recommendation is consistent with

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[35] In the present study, it was only due to time constraints that these materials were not included.

their previous comments regarding the need for face-to-face sessions. Obviously, a hybrid of online and face-to-face classrooms would appear to be more beneficial for all concerned considering the fact that students may have different learning styles and mode preferences in the first place. With hybrid instruction, those who are reluctant to participate in the face-to-face classroom would benefit from participating in online discussion and, by the same token, those who are desperately in need of direct communication with the teacher would benefit from traditional face-to-face classrooms. Thus, in a sense, hybrid instruction appears to be a win-win solution for all. The following are among some of participants' recommendations for a blend of face-to-face and online learning:

> …saya mengharapkan forum diskusi melalui internet balance dengan face to face tiap minggunya, tujuannya adalah setiap minggunya ada pemantapan, walaupun sebenarnya sudah ada kesempatan bertanya melalui forum tapi menurut saya kurang efektif (A#1). …
> I hope there is a balance between online discussion and weekly face-to-face meeting; therefore, there will always be reinforcement every week. Although there is an opportunity to post queries in the bulletin board, I think it's less effective (if we just rely on it).
>
> Sebaiknya proses pembelajaran melalui Web diperbanyak tapi diselingi dengan proses pembelajaran secara langsung atau face to face (A#13).
> It is advisable to increase use of Web-based learning but interspersed with face-to-face instructions.
>
> Menurut saya, seharusnya pada minggu pertama dilakukan tanya jawab melalui internet, lalu minggu keduanya bapak melakukan pertemuan face to face untuk menjelaskan pertanyaan dan jawaban pada minggu pertama dan begitu seterusnya, saya pikir cara ini akan lebih efektif, thanks (A#44).
> In my opinion, online discussion should be conducted in the first week, followed by face-to-face meeting in the second week to discuss issues/questions raised in the previous week (then again followed by online learning in the third week) and so on and so forth. I think that will be more effective, thanks.

In short, as far as the participants are concerned, online learning can be improved by including interactive games and pictures in the Web and, most importantly, by

blending online with face-to-face instructions – a recommendation identical to that made in a previous study (Whipp 2003).

4.1.1.4 Conclusion for Research Question #1

Having examined in great detail students' comments on their first online learning experience, there are a few important conclusions to be drawn from this study. In general, students have very positive impressions of, and attitudes to, online learning as they experienced it firsthand. Reported advantages (frequency 101) far outnumbered the disadvantages (frequency 42) – a finding consistent with previous studies conducted elsewhere (Felix 2004; Chang 2000, as cited in Ku & Lohr 2003). As far as the participants are concerned, the advantages of online learning, listed from the most to the least frequently mentioned, were:

(a) fun/interesting learning experience

(b) gaining computer literacy

(c) interactivity

(d) opportunity for self-testing

(e) quality learning

(f) to enable shy and reluctant students to participate

(g) flexibility

(h) no face-to-face meeting required

(i) socialisation (making friends)

(j) easy access to course materials, and

(k) absence of noise.

As for the disadvantages, listed once again from the most to the least frequently mentioned, these were:

(a) absence of face-to-face contact

(b) technical problems

(c) lack of computer literacy

(d) lack of teacher's monitoring or supervision

(e) decreased participation overtime

(f) lack of immediate feedback or responses

(g) inadequate facilities (difficult access to computer)

(h) difficult to tell whether the person on the Net is real, and

(i) potential for non-participation.

Given students' overall evaluation, it can now be concluded with a certain degree of confidence that online language learning appears to be a viable alternative to face-to-face classroom teaching for this student population – a conclusion similar to that reported by previous studies conducted elsewhere (e.g. Felix 2002; Yang 2001). However, a hybrid of online and face-to-face instructions as suggested by some participants appears to be more desirable than pure online learning because it seems to be capable of accommodating different learning styles and mode preferences among the students.

4.1.2 Research Question #2: What are students' general impressions of and attitudes to their first hybrid course in the teaching/learning of English Grammar?

a. What are the perceived advantages and disadvantages/drawbacks of such a learning environment?

b. Do the advantages outweigh the disadvantages?

c. Given students' overall evaluation, what is the potential/viability of hybrid courses for these students?

To answer the above question, students' comments[36] on their first hybrid learning experience will be analysed so that the viability and potential of this method for this student population can be examined. Students' comments will be analysed descriptively by identifying emerging topics/themes. Comments that belong to the same category will be grouped together and the frequency of the emergence of such themes will be shown. Possible links among themes will also be identified and discussed when relevant.

To begin with, students' comments on their first hybrid learning experience can be broken down into three major themes/topics: (a) comments regarding the advantages or benefits of hybrid learning, (b) comments regarding

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[36] Students attending hybrid instructions tended to write shorter comments compared to those attending pure online instructions. Additionally, only 36 students (70.59%) in the hybrid format wrote their comments compared to 56 students (96.55%) in the online format.

its drawbacks, and (c) comments regarding students' suggestions or recommendations. Comments regarding the advantages of hybrid course offerings will be discussed first, followed immediately by comments on the disadvantages and students' recommendations. Finally, the prospective of hybrid course offerings for this student population will be critically evaluated and discussed in light of students' reflections of their first hybrid learning experience.

4.1.2.1 Perceived Advantages of Hybrid Instruction

As far as the students are concerned, the benefits of hybrid learning, as they experienced it firsthand (frequency of total reported advantages = 82), can be broken down into ten different but inter-related themes, listed from the most to the least frequently mentioned, including:

> (a) fun/interesting/comfortable learning experience
>
> (b) gaining computer/internet literacy
>
> (c) quality learning
>
> (d) interactivity
>
> (e) course satisfaction
>
> (f) flexibility
>
> (g) socialisation (making friends)
>
> (h) easy access to course materials
>
> (i) self-testing, and
>
> (j) self-confidence gain.

4.1.2.1.1 Fun/Interesting/Comfortable Learning Experience

The most frequently reported advantage of hybrid instructions in the present study is that they resulted in a fun/interesting/comfortable learning experience[37] (frequency of reported advantages: 29). One student reported that the class was particularly enjoyable, fun and 'different' from other classes she attended that semester:

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[37] Note that this observation is quite similar to that made by students attending pure online instruction.

> Menurut saya, kelas ini benar-benar kelas yang paling asyik, seru, dan berbeda dengan kelas-kelas lainnya (B#32).
>
> In my opinion, this class was really fun, enjoyable, and really different from other classes.

Interestingly, another student testified that she originally perceived English Grammar as either boring or less interesting, but later, after attending hybrid instruction over the course of the semester, she found the subject interesting:

> Selama ini saya berpikir bahwa belajar grammar sangat membosankan dan kurang menarik, bahkan saya merasa sanksi untuk mengikuti mata kuliah grammar ini. Namun setelah menjalani proses belajar di kelas grammar ini, ternyata sangatlah menyenangkan dan menarik… (B#41).
>
> I had always believed that studying grammar was boring and less interesting. In fact, I originally had a great doubt with this class (subject). However, after attending this class, I found it enjoyable and interesting indeed.

In other words, hybrid learning has positively affected this student's perception of English Grammar.

Similarly, one student also reported that he originally had the impression that English Grammar was confusing for him. However, as he testified, this impression gradually changed and, in fact, he started to like the subject as time went by. Most importantly, this student explicitly mentioned that, as far as he is concerned, hybrid learning is a good learning method:

> Seiring berjalannya waktu, kesan saya bahwa Grammar itu sangat membingungkan perlahan-lahan luntur dan saya merasa bahwa belajar Grammar sangat menarik….Saya rasa ini adalah metode belajar yang sangat bagus… (B#19).
>
> As time went by, the impression that grammar was confusing gradually changed and I began to feel that it was, indeed, quite interesting…I believe this is a very good (learning/teaching) method.

Since a significant number of students consistently reported that hybrid instruction is fun, interesting, and enjoyable, an attempt was made to seek possible explanations for this phenomenon. Apparently, one reason that made hybrid

instruction interesting is the fact that the learning/teaching method was not monotonous. As one student wrote:

> Komentar saya tentang mata kuliah grammar yaitu sebuah mata kuliah yang sangat menarik. Sebab metode yang digunakan tidak tergolong monoton (B#39).
> My comment is that English Grammar is an interesting subject because the (teaching/learning) method employed is not monotonous/tedious.

Obviously, in a hybrid learning environment, students are exposed to different learning activities including, but not limited to, classroom presentation by the teacher (review of previous course materials and introduction to forthcoming materials), classroom discussion, online discussion using synchronous and asynchronous communication, online quizzes, etc. These varied learning activities not only made the class interesting, but it might also be capable of accommodating existing differences in students' personal characteristics and backgrounds. Therefore, it is not surprising that some students were highly enthusiastic and motivated to attend the class:

> Kesan saya terhadap matakuliah ini sangat antusias dalam mengikuti kuliah ini dan mengenai cara dan metode pengajarannya membuat saya lebih bersemangat dalam mengikuti mata kuliah tersebut, terutama belajar via internet (B#48).
> As far as this unit is concerned, I was very enthusiastic to attend the class. The method employed made me more motivated, particularly as far as the online learning is concerned.

In short, the present study seems to suggest that the application of hybrid instruction in the teaching of English Grammar has some positive consequences because not only did it make the class interesting, but it also boosted students' interests and motivation to study the subject. Multiple studies have indicated that motivation is one of the most important factors for successful learning, particularly as far as language learning is concerned (Dörnyei 2003). In this respect, the integration of hybrid instruction into the foreign language classroom is quite promising.

4.1.2.1.2 Gaining Computer Literacy

Another frequently reported benefit of hybrid instruction is that the participants were able to gain important computer and/or internet literacy (frequency of reported advantages: 23):

> Di dalam kuliah grammar juga, saya mendapatkan banyak hal diantaranya dapat mengoperasikan internet. Padahal sebelumnya, saya tidak bisa mengoperasikan internet (B#10).
> With English Grammar class, I have gained many things. Among others, I could now use the Internet which I previously did not know anything about.

> Now, I know how to make a e-mail, how to use it, and chat with other people with internet tools (B#38).
> Now I know how to create an email account, how to use e-mail, and how to chat with other people using internet tools.

Although gaining computer or Internet literacy was not the main objective of the grammar class, it is yet another welcome outcome. In the present study, participants' level of computer literacy varied considerably from the real beginners to the advanced users[38]. Therefore, a training session was organised prior to the commencement of the new semester. As a result of this training, most of the participants attending hybrid instructions acquired minimal computer skills sufficient to enable them to participate in the online section of the hybrid instruction.

For those who did not have previous experience with computers at all, let alone the Internet, being able to create an e-mail account, or participate in an online discussion is obviously a significant improvement in computer literacy. Given this situation, it is not surprising that many participants reported that they have gained important computer literacy as a result of attending hybrid instruction. Of course, these responses concerning gaining computer literacy may

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[38] As previous studies have shown, participants with excellent computer skills tend to have much higher expectations of online learning compared to those with minimal computer skills. Consequently, given these high expectations, they are inclined to be less satisfied with the quality of online learning.

have been different had all participants had sound computer literacy in the first place.

Other participants reported that attending hybrid instruction over the course of the semester has enabled 'killing two birds with one stone' – to learn English Grammar and the Internet at the same time:

> Dengan belajar melalui internet inipun sudah menambah pengetahuan saya bukan saja dalam hal penguasaan Grammar tapi juga bisa memahami lebih banyak tentang teknologi terkini (B#26).
> Learning via the Net has enhanced not only my understanding (knowledge) of English Grammar, but it has also enabled me to have a better grasp of this sophisticated technology.

> …kami tidak hanya mendapat pengetahuan mengenai tata bahasa inggris, tapi juga mengenai internet yaitu bagaimana membuat e-mail, chatting, dan banyak lagi (B#32).
> …we gained not only knowledge of English Grammar, but also knowledge of the Internet such as how to create an email account, how to chat, and much more.

In short, students attending hybrid instruction reported that the online part of their class has enabled them to gain important computer literacy, a finding consistent with previous studies (Ali, Hodson-Carlton & Ryan 2004; Felix 2001, 2004; Montelpare & Williams 2000; Ward & Newlands 1998).

4.1.2.1.3 Quality Learning

Another reported benefit of hybrid instruction is that they afforded quality learning (frequency of reported advantages: 8). In particular, some participants reported that, having attended hybrid instruction over the course of the semester, they now have a better grasp of course materials (e.g. tenses) which they had always had a problem with in the past. As one student remarked:

> Saya lebih memahami tenses yang selama ini menjadi masalah saya dalam membuat kalimat bahasa Inggris (B#41).
> I now have a better understanding of tenses which, in the past, had always been a problem for me in constructing sentences in English.

Tenses, one of the topics covered in English Grammar I, has actually been taught since participants attending Junior High School education but, ironically, many students still have numerous problems with this topic even after they have completed their tertiary education. Discussing this issue further, however, is beyond the scope of the present study. Nonetheless, that the above participant reported that she now has a better understanding of this topic, which had always been a lingering problem for her in the past, is quite interesting. Quantitative analyses of students' pre- and post-test scores, indeed, indicate that there was a significant increase in students' post-test scores over the course of the semester. In fact, of the three groups (face-to-face, hybrid, and online), students attending hybrid instruction made the highest gain scores, although the difference in the post-test means scores across the three groups are not statistically significant (see section § 4.2.1.4 for a detailed discussion of this issue).

Interestingly, another student implicitly reported that she understood course materials easier with the online part of the hybrid instruction than with the face-to-face:

> Saya akui dengan belajar melalui internet ini saya lebih cepat memahami mata kuliah ini dan tidak perlu mengulang-ulang untuk bisa mengerti (B#26).
> I admit that learning via the internet made me understand course materials much more easily (compared to learning face-to-face) and I did not have to repeat reading them many times to understand.

Again, this is yet another example of how students' characteristics (learning styles, mode preferences, previous experience with computers, attitudes to technology, etc.) may affect their belief concerning how they would learn better. As discussed previously, whilst some students believe that they learn more effectively in traditional face-to-face classrooms, others may find that they learn better in an online learning environment, as reported by the above participant. It is for this reason that hybrid instruction appears to be more desirable than a pure online format. With hybrid instruction, those who do not believe in or feel confident with online learning can still take advantage of face-to-face sessions without sacrificing the need of those who have a preference for online sessions.

Finally, another student reported that not only did she gain valuable knowledge of English grammar, but also had a precious learning experience:

> Following this subject, I am not only get a value knowledge, but also a value experience (B#38).
> Taking this unit, not only have I gained valuable knowledge, but also valuable experience.

All in all, as far as students' comments are concerned, hybrid instruction appears to afford the students' quality learning. Some participants testified that hybrid instruction helped them learn course materials effectively. This statement is strongly supported by the quantitative analysis of the students' pre-/post-test scores as mentioned above. More importantly, participants also expressed their appreciation of and positive reception to this new learning experience.

4.1.2.1.4 Interactivity

Another reported benefit of hybrid instruction is that they enabled interactions between the students and the teacher and among the students (frequency of reported advantages: 5). This interaction (e.g. asking or answering questions, participating in discussions, etc.) occur either during face-to-face classrooms or via the net using both synchronous (chat rooms) and asynchronous (forums or e-mail) communication. Interestingly, the overwhelming majority of comments made by the participants concerned mostly their online experience, although they also attended face-to-face sessions that semester. Obviously, being a new learning experience, the online part of the hybrid instruction is naturally more attractive to comment on compared to the face-to-face section of it which participants have been through throughout the history of their education and this is exactly the case with the present study.

Most of the interactions reported by the participants are related to their activities in the forum. In particular, participants reported that they used the forum to post queries or respond to others' queries. In fact, these activities (posting queries and responding to postings) constitute one of the most popular functions of the forum. As one student wrote:

> Selain itu kita dapat bertanya ataupun menjawab dengan menggunakan media forum (B#39).
> Besides, we could post queries or reply to others' queries using the forum.

Topics that were not sufficiently addressed or resolved during online discussion were dealt with during face-to-face sessions in the classroom with the teacher. This way, participants who did not have an opportunity to participate during online discussion could take advantage of classroom sessions and vice-versa:

> ... forum sebagai tempat untuk mengajukan dan menjawab pertanyaan, komentar, saran, dan lain-lain. Selain itu, ditambah lagi dengan penjelasan oleh Dosen mata kuliah di kelas sehingga lebih mudah dapat dipahami. Ini juga membantu mahasiswa yang tidak sempat membuka web grammar (B#41).
> …forum is a medium for posting and replying to questions, comments, suggestions, etc. Additionally, direct explanation from the teacher during face-to-face sessions in the classroom made it even easier to understand course materials. This is also of help for those (students) who did not have an opportunity to access the grammar website (during the week).

Thus, in a sense, students have some sort of flexibility pertaining to how they would like to interact or participate; they could engage in both online and face-to-face discussion. That way, students could always decide when it is convenient for them to participate or contribute. Those who find classroom discussion daunting could engage in online discussion and those who are desperately in need of the physical presence of the teacher during the discussion could benefit from face-to-face sessions. Interestingly, one student also mentioned that one of the advantages of online over classroom discussion is that, unlike classroom discussion, online discussion is not constrained by time and space:

> Adapun dengan menggunakan metode face to face kita hanya dapat berkomunikasi mengenai bahan yang akan di pelajari walaupun internet lebih baik karena tidak dibatasi oleh ruang dan waktu untuk berkomunikasi (B#39).

> With the face-to-face method, we could certainly discuss course materials, but with the internet, this communication was not constrained by space and time.

Participants also used the chat room to practice their knowledge of tenses in a real conversation with other classmates or with the teacher. It is worth mentioning that the system was designed in such a way that the teacher could actually monitor the students who logged in to the chat room. The students could, however, decide whether the content of their conversations was made visible to others or whether they wanted to hide it. It was during this process that some students reported encountering technical problems and could not log in to the chat room, as discussed earlier (see § 4.1.2.2.1 for more details).

In short, hybrid instruction appears to support dynamic interactions among the students and between the students and the teacher. This is not particularly surprising given the fact that participants could actually engage in both online and face-to-face discussion. However, unlike online discussion, face-to-face communication is constrained by time and space. As far as online discussion is concerned, participants repeatedly mentioned the usefulness of the forum in supporting their interactions. Chat rooms have also proved to be an important means of communication, enabling the students to 'converse' with their classmates.

4.1.2.1.5 Course Satisfaction

Some participants explicitly mentioned that they were satisfied with the quality of the unit (frequency of reported advantages: 5):

> Secara keseluruhan, saya sangat puas dengan mata kuliah ini... (B#21).
> Overall, I am very satisfied (happy) with the quality of this unit.

As mentioned earlier, hybrid instruction appears to be capable of accommodating different students' characteristics (e.g. learning styles, mode preferences, attitude to and belief in the technology, previous experience with computers, etc.). For example, whilst some students reported that they learned more effectively online, others testified that they could not stand prolonged exposure to the computer

screen or, simply, they found learning face-to-face more effective for them. In this case, hybrid instruction appears to benefit students with different characteristics and, therefore, it is not particularly surprising that a number of students explicitly expressed their satisfaction with the unit.

In addition to expressing their satisfaction with the unit, there were also participants who explicitly reported that they were particularly satisfied with the instructional method (hybrid). As one student wrote:

…*saya sebagai siswa bapak merasa puas dengan metode ini* (B#45).
…as your student, I am satisfied (happy) with this (instructional) method.

Follow-up interviews revealed two major explanations concerning participants' satisfaction with the instructional method. Firstly, the mixture of online and face-to-face format was highly appreciated by the participants as they could decide how they would like to participate (whether to participate in online or in face-to-face discussions). Secondly, the forum and the chat room are considered to be the most important aspect of online learning as they enable them to stay in touch with their classmates as well as the teacher, knowing that they could always seek help anytime regardless of time and space. That some students explicitly expressed their satisfaction with the hybrid method may be attributed to the characteristic of this method in affording the students unconstrained interactions.

To sum up, some students attending hybrid instruction indicated that they were quite satisfied with both the quality of the unit and the instructional method. In particular, students highly appreciated the dynamic interactions afforded by synchronous and asynchronous communication. This, in turn, resulted in an overall unit satisfaction.

4.1.2.1.6 Flexibility

Another reported benefit of hybrid instruction concerns its flexibility (frequency of reported advantages: 3), in that, students can learn course materials anytime, anywhere:

> Karena walaupun kami tidak duduk di dalam ruangan kita juga bisa belajar dari tempat lain entah itu di rumah atau di warnet yang jelas kami bisa merasakan suasana yang berbeda dari hari-hari lain (B#26).
> Although we are not sitting in the classroom, we could learn in other places, be it at home or at the Internet café. Clearly, we've experienced something different.

Because hybrid instruction is quite flexible, it afforded the students much time to learn course materials because, as mentioned above, they are not constrained by place and time:

> I like this system. It gives me many times to learn grammar. Not only in class. Not only in specific time. But in everywhere and every time (B#Anonymous).
> I like this system. It gives me much time to learn grammar (as I could learn) not only in the classroom at a specific time but also anywhere, anytime.

Since students could have access to course materials and online quizzes anytime, anywhere, they could decide the best time for them to study. Additionally, since forums and chat rooms are always accessible, participants could discuss course materials with their classmates without the need to meet face-to-face. Most importantly, as mentioned earlier, since hybrid instruction involves both face-to-face and online sessions, there are always choices concerning how participants would like to participate or contribute. In this case, hybrid learning enables the students to not only decide when it is convenient for them to study, but also to decide how they would like to participate (online vs face-to-face).

Put simply, hybrid instruction affords the students a flexible learning experience and provides options for their participation.

4.1.2.1.7 Socialisation (Making Friends)

Participants also reported that hybrid instruction, particularly the online section, has enabled them to socialise and make friends (frequency of reported advantages: 3):

> …we get friends from internet by chatting programs (B#12).
> …we get friends from the Internet by chatting (by means of chatting software).

Although making friends was not the main objective of the grammar class, it was yet another welcome outcome. Other students mentioned that while they made some good friends, they also gained knowledge at the same time:

> Banyak hal yang saya dapatkan di dalam belajar grammar, selain pengetahuan juga teman-teman yang baik (B#10).
> I have gained a lot from this grammar class – besides gaining knowledge, I also made good friends.

> …dapat banyak teman di berbagai kota dan yang paling penting saya jadi lebih mengerti mengenai English Grammar (B#32).
> …made lots of friends from other cities and, most importantly, I now have a better comprehension of English Grammar.

Interestingly, as mentioned by one of the above participants, not only did she make friends with her own classmates, but also with others from different cities. This finding came as a surprise simply because the synchronous communication facility (chat room) used in the present study is particularly designed for the participants taking the unit and not for the public. Follow-up interviews with a number of participants revealed a surprising finding. Apparently, at their own initiatives, some participants had even learned how to use other chatting softwares such as Yahoo Messenger provided by Yahoo! [TM] or to register and log in to other sites providing free bulletin boards and to participate in the discussion on a number of issues, voluntarily. Some students anecdotally reported that they had an interesting chat with students from the USA and Canada and reported that it was really fun and made them more confident with their English[39].

Obviously, the forum provides greater opportunities for the students to communicate with native speakers using the target language as a means of

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[39] Given this finding, a future research agenda could include the creation of an inter-university online program whereby EFL learners could work together on a project with their native English speaker counterparts. This way, students from different countries could help each other learn to use the language in a more authentic way for authentic purposes (online tandem language learning). This approach is more student-centred and is more in line with current pedagogical theories of learning (i.e. constructivism).

communication, thus enabling the students to "acquire new lexical items and correct grammatical structures through collaborative scaffolding" (Lee 2004 pp. 96 - 97). Through chatting, particularly chatting with native speakers, students could learn how to negotiate meaning – a process critical to language acquisition (Tudini 2003).

Needless to say, the Internet enabled social interactions across different cultures and nations. In the context of language learning, the internet enables the students to have access to native speakers without having to travel great distance to meet one (Yang & Chen 2007). Having access to a native speaker is particularly important for language learners. Not only could the participants put their knowledge into practice for real life purposes, but they could also gain motivation from such encounters. In fact, it has been reported that online interactions between native and non-native speakers "promoted the scaffolding by which the NS's assisted the NNS's in composing meaning (ideas) and form (grammar)" (Lee 2004 p.83). Thus, interacting with native speakers not only provides the learners with a more authentic opportunity to use the language, but it also enables them to acquire necessary skills and experience which may not be afforded by traditional face-to-face classrooms. Furthermore, with the Internet, EFL learners are afforded great opportunities to learn the culture of the people speaking the language, either by visiting websites that provide information about that culture, or through online encounters with the native speaker of that language.

To sum up, in the context of English Grammar teaching and learning, the Internet enables the students to learn beyond the knowledge of grammar. It affords the students an opportunity to interact with native speakers and, even better, to develop genuine friendships through their online encounters. These interactions not only help EFL learners acquire the language in a more authentic way, but it could also boost their motivation to learn the language. In this vein, the role of this technology in supporting language learning cannot be underestimated.

4.1.2.1.8 Easy Access to Course Materials

Participants also reported that they could have access to course materials quite easily (frequency of reported advantages: 3):

> Disamping itu, adanya metode pembelajaran yang menggunakan sistem internet sangat memudahkan kami dalam mengambil materi (B#46).
> Besides, the learning method employing the Internet made it easier for us to access (download) course materials.

> Materi tentang mata kuliah ini diperoleh dengan mudah melalui internet… (B#10).
> Course materials for this subject were easily accessible through the Internet.

As is the case with participants attending the pure online format, participants in the hybrid section also perceive that the Internet enables them to have easy access to course materials. Further discussion of this issue has been provided in the previous section (see § 4.1.1.1.10 for more information on this issue). Therefore, not much will be mentioned here apart from the fact that some students reported that they studied course materials directly from the computer screen, whilst others reported that they saved them in a USB and studied them at home. For those who did not have a computer at home, they printed these materials instead for home study.

4.1.2.1.9 Opportunity for Self-Testing

Another reported benefit of hybrid instructions, albeit of low frequency, concerns the fact that participants could self-test their own mastery of course materials by doing online quizzes (frequency of reported advantages: 1):

> …serta dilengkapi dengan kuis yang merupakan sarana menguji kemampuan materi Grammar (B#Anonymous).
> … and was equipped with quizzes for us to self-test our mastery of course materials of grammar.

In the present study, course materials were accompanied by online quizzes which can be accessed anytime. Online quizzes are important because they enabled the students to see how they have comprehended course materials and could also reveal the area(s) where students need to work more (see section § 4.1.1.1.4 for more discussion of this issue). Quizzes were also provided during face-to-face

sessions of the hybrid format, but participants seemed to be more interested in online quizzes as they are more interactive (computers could respond to students' answers instantly). As for face-to-face quizzes, participants needed to consult the answer key provided by the teacher themselves. Nonetheless, participants reported that quizzes are important aspects of their learning.

4.1.2.1.10 Time Efficiency

One participant also reported that hybrid instruction resulted in time efficiency in learning, in that, less time is required for studying course materials compared to studying in pure face-to-face classrooms (frequency of reported advantages: 1):

> Selain dapat mengefisienkan waktu pembelajaran, cara ini juga secara tidak langsung membiasakan kita untuk menggunakan internet (B#Anonymous).
> Besides making study time more efficient, this method indirectly made us accustomed to using the Internet.

Although the frequency of this response is very low as indicated above, this finding is important and is worthy of further comments. To begin with, in traditional face-to-face classrooms, not all problems faced by each participant can be discussed all at once in one class meeting, primarily due to time constraints[40]. As a result, there are always participants who have unresolved problems or questions with course materials following each class meeting. In this case, they have to wait until the following week to get their problems attended to (although it cannot be guaranteed that there will be sufficient time available for everybody in the following week). In an online learning environment, however, participants do not have to wait till the following week to get their questions or queries responded to. They could simply post their queries in the forum and it would not be long before a response (be it from the teacher or from their own classmates) becomes available to them. Therefore, it is not surprising that one of the participants noted that the online section of the hybrid format saved her/him time in comprehending

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[40] This is particularly true given the number of the students in a class.

course materials, presumably because he/she could ask for clarification or questions regardless of time and space.

4.1.2.1.11 Gain Self-Confidence in Communication

Finally, one student reported that she has gained self-confidence in communicating with her friends as a result of attending English Grammar class that semester (frequency of reported advantages: 1):

> …this subject also make me confidence when I do communication with every English student. As like that I more trigger for study English Grammar (B#Anonymous).
> …this subject has also made me more confident in communicating with other students at the English Department. That way, I became more motivated to study English Grammar.

Whereas no clues were present in her written comments as to why or how this participant came to gain her confidence, a follow-up interview with this participant indicated that she felt more confident with online (using chat rooms or forums) than with face-to-face communication (see § 4.1.1.1.6 for a similar discussion of this issue). It could well be that, as this confidence to communicate online developed, so did students' confidence in face-to-face communication. If this proves to be the case, then hybrid instruction, particularly the online section, offers a great opportunity for the students who may find face-to-face communication a daunting experience. Interestingly, as the above student reported, as she started to gain her confidence to communicate with her friends, she also became more motivated to study English Grammar.

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In conclusion, participants in the present study indicate that hybrid instructions offer various advantages and benefits. The frequency of total reported advantages is 82. These reported advantages can, further, be divided into eleven different, but inter-related, themes as discussed above. Of all these advantages, the most frequently reported is that Web-based learning is fun, interesting, and comfortable

(frequency: 29). Interestingly, the frequency of the reported advantage of the class as being interesting and fun is strikingly similar to that for the online format (both 29 times). Thus, it seems that participants in the present study highly value their first hybrid learning experience. However, there was also a report on the drawbacks of this method which will be discussed immediately below.

4.1.2.2 Perceived Disadvantages of Hybrid Instruction

The frequency of total reported disadvantages (8) compared with 42 in the online only group, can be broken down into several categories, listed from the most to the least frequently mentioned:

> (a) technical problems
> (b) preference for pure face-to-face
> (c) lack of computer literacy, and
> (d) decreased social relations.

4.1.2.2.1 Technical Problems

The most frequently reported drawback of hybrid instruction, particularly as far as the online section is concerned, is related to the technical problems faced by the students while surfing the net (frequency of reported disadvantages: 4). These problems ranged from, among others, difficulty accessing a computer (as participants had to queue to be able to have access to computers in the internet café), a power cut, slow loading, computer experiencing errors, etc[41]. As can be seen from the participants' comments, these problems have negatively impacted on their evaluation of studying English Grammar via the net. This is how it was put:

> Tapi ada juga seh yang tidak menyenangkan belajar grammar! Especially in warnet, coz kadang saya harus antri, kadang mati lampu dan selalu lambat loading!!! (B#36).
> But there were also uncomfortable experiences with learning grammar, especially in the Internet café because sometimes I just had to queue, sometimes there was a power cut, and the loading was always slow!!!

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[41] These problems are generally similar to those reported by students attending the pure online format as discussed in the previous section.

> …proses belajar grammar melalui internet punya banyak kendala seperti lampu padam, computer error, lambat loading dan kendala-kendala lainnya. Saya merasakan ini terutama pada saat chatting dan saat berpartisipasi di website (B#32).
>
> …learning grammar via the Internet had a great deal of obstacles such as a power cut, computer experiencing errors, slow loading and so forth. This happened particularly when I was in the middle of chatting or participating in the Website (forum).

As mentioned in the previous section (see section § 4.1.1.2.2), the above reported drawbacks have also been identified in previous studies (Ali, Hodson-Carlton & Ryan 2004; Felix 2001; Keller & Gernerud 2002; Ku & Lohr 2003; Montelpare & Williams 2000; Ward & Newlands 1998). Interestingly, the fact that most of the reported drawbacks of the online section of the hybrid format are related to technical problems confirms the contention of a previous researcher who claimed that most of the disadvantages of online learning are technical in nature (Evans *et al.* 2004).

Given this finding and those of the previous study mentioned above, it appears that technology factors play a critical role in the success of any online or hybrid learning program. Therefore, these factors need to be seriously taken into account. For countries that have embraced broadband network, internet loading speed and connection reliability may not be an issue at all. For those that still rely heavily on dial-up connection, however, the speed of the internet connection should be seriously considered when designing online learning activities. With slow internet connection, opening large files (such as pictures, sounds, movies, etc.) could be frustrating and demotivating for some students. In this situation, use of texts instead of picture, sounds and movies, may be more reasonable[42], although text alone would obviously be less attractive. Nonetheless, unless the technology itself is reliable in the first place, integrating technology in the classroom could result in uncertainties and frustrations for both teachers and students. With a good plan, many, if not all of the above problems mentioned by

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[42] Ideally, though, a good language learning site should make use of pictures, sounds, and movies to provide the students with a more authentic and interesting learning experience.

the students above could be avoided or minimised, thus making the hybrid learning experience more enjoyable for everybody.

4.1.2.2.2 Preference for Pure Face-to-Face Instruction

Of the 36 students writing their comments on their first hybrid learning experience, two students reported that they would prefer pure face-to-face over hybrid instruction (frequency of reported disadvantages: 2). Both participants pointed out that they believe that they understand course materials better if they are explained directly by the teacher in the classroom:

> …walaupun sebenarnya saya lebih senang belajar face-to-face di kelas karena saya merasa lebih cepat mengerti dengan mendapat penjelasan secara langsung dari dosen (B#32).
> …although I would actually prefer studying face-to-face in a classroom simply because I feel that I understand (course materials) more easily when listening to a direct explanation from the teacher.

> Namun, saya lebih menyukai belajar di kelas dibandingkan belajar secara online di internet karena walaupun di internet telah disediakan materi secara lengkap dan kita dapat saling berdiskusi dengan sesama teman, namun menurut saya, materi itu akan terasa lebih mudah dipahami jika diterangkan oleh dosen secara langsung (B#44).
> But I would prefer studying in a classroom compared to studying online using the Internet. Although comprehensive course materials are provided on the net and we could have a discussion with classmates, I believe that I would understand course materials more easily if explained directly by the teacher.

There are two possible explanations for this phenomenon. Firstly, as discussed in the previous section, students' characteristics (learning styles, mode preference, previous experience with the technology, belief in and attitude to technology, etc.) may affect how students learn. That the above two students expressed their preference for pure face-to-face instruction may have been attributed to their inherent personal characteristics (Rovai 2004). In other words, these students prefer pure face-to-face to hybrid instructions not because hybrid is a bad method, but simply because they feel or believe that they will learn better or understand course materials more easily if the teacher is there to explain course materials to

them. Furthermore, during face-to-face sessions, not only can the students listen to a teacher's explanation and ask questions if necessary, but they can also observe a teacher's verbal and non-verbal cues such as body language, tone, etc. which are vital for comprehension.

The second possible explanation concerns students' learning habits. From primary school up to tertiary education, teachers have always been seen as a critical factor (or perhaps the most critical factor) in students' learning[43]. Learning without the physical presence of the teacher (as is the case with the online section of the hybrid format) would mean that students' have to move out of their comfort zone. This speculation is supported by students' comments indicating their reluctance and hesitation at the beginning of the semester, although many of them finally enjoyed their new learning experience.

4.1.2.2.3 Lack of Computer Literacy

Another reported drawback of hybrid instruction, albeit of low frequency, concerns a participant's lack of computer literacy (frequency of reported disadvantages: 1). Just like the computer literacy of the participants in the online group, the computer literacy of the participants in the hybrid group varied considerably from non-users to expert-users. Therefore, training sessions were organised for those who either had minimal computer skills or did not have previous experience with computers at all. In spite of this training, however, one participant appeared to have to struggle to be able to cope with the demand of online learning using the hybrid format:

> ...dan yang paling membuat saya lebih susah yaitu ketika ada materi atau tugas yang harus dikerjakan lewat internet karena saya belum terlalu tahu menggunakan layanan internet... (B#18).
> ...and the thing that made me feel more miserable was that when there was an assignment that needs to be done on the net – I am not that familiar yet with the internet…

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[43] In fact, as discussed previously, one student was reluctant to contribute because she felt that online learning was lacking of teacher's supervision and monitoring.

Interestingly, whilst this participant reported that her computer skills were still inadequate to meet the demand of online leaning and that she felt miserable as a consequence, she also reported that, overall, she was basically happy with her new experience with hybrid learning. She believed that she had gained a lot of new skills and, in fact, had attributed her first encounter with the internet to the grammar class:

> Tapi dari semua ini saya sangat senang. Saya banyak mendapatkan pengethauan baru karena dosen mata kuliah ini yang pertama kali memperkenalkan internet kepada saya... (B#18).
> Above all, I am really happy (with the class). I gained lots of new skills (knowledge) because it was the instructor of this class who first introduced me to the internet.

In other words, although this participant had to struggle to be able to use the Internet in her learning, she seemed to appreciate her new learning experience. Nonetheless, this finding should, at the same time, become a warning as to just how important students' computer literacy is in this learning environment. Lack of computer skills may result in student frustrations which, at the end of the day, could negatively affect their perception of both the mode of delivery and the unit. Obviously, whilst some students might bear the amount of stress they have to cope with and continue to acquire new computer skills as the class progresses, others might just give up the struggle earlier.

All in all, students' level of computer literacy plays a significant role in the success of any hybrid learning program. Not only did students' computer skills affect their perception of the mode of delivery, but it had a significant impact on their perception of the unit. Providing extensive training and scaffolding, especially to those who do not have previous experience with computers is of immense importance if we are to see successful hybrid learning.

4.1.2.2.4 Decreased Social Relations

The final reported drawback of hybrid learning in the present study, particularly as far as the online section is concerned, is that it could result in decreased social

relations between the participants and the teacher (frequency of reported disadvantages: 1). In particular, this participant pointed out that the online section of the hybrid instruction contributed to a distant relationship between the teacher and the students. This student also mentioned that whilst the teacher may be familiar with his students' faces, he may not necessarily know them by name:

> I think that by online system the relationship between lecturer and undergraduate students is not too close. You just know our face but only some students that you know their name, right? Moreover, in class meeting u never mentioned our names usually we call "mengabsen". But it's not a big problem for me. Above all, I have been learning grammar whether in class or not (B#Anonymous).
>
> I think with online learning, the relationship between the lecturer and the students is not very close. You may be familiar with our faces, but you may know only some of us by names, right? Moreover, in a class meeting, you never called out our names or "mengabsen" (checking students' attendance by calling out their names). But it is not a big problem for me. Above all, I have been learning grammar be it in class or not.

In other words, there are actually two different concerns voiced by the participant. The first is related to the ability of the online learning environment in supporting social relationships between the teacher and the students. It was implied that online learning was less capable of promoting a close relationship between the students and the teacher, presumably due to the physical distance between them. The second concern is related to the fact that the teacher did not call out students' names one by one when checking their attendance during face-to-face classroom sessions which may even further justify her feeling about the not-too-close relationship between the teacher and the students. Perhaps this participant somehow feels that she is ignored by the teacher or the teacher is not interested in his students by failing to call out their names. Nonetheless, in the present study, whilst students were addressed by names during classroom or group discussions to increase 'psychological closeness' between the teacher and the students (Baker 2004; Gorham 1988), the teacher did not actually call out their names one by

one[44] as what this participant had expected, simply because this would take a lot of time given the number of the students in a classroom.

All in all, it appears that creating a close social bond between the teacher and the students is important to ensure that the students do not feel that they are neglected or that the teacher is not interested in their learning. While creating a close relationship is important for both online and face-to-face modes of instruction, it is particularly critical for online learning in the absence of face-to-face communication with the teacher. One way to do this is to address the students by names in such a way that they feel that the teacher is paying close attention to them.

<div align="center">***</div>

In conclusion, participants in the present study reported that hybrid learning suffers from a number of drawbacks. The frequency of the total reported disadvantages is 8. These identified drawbacks can, further, be divided into four different themes as discussed above. Of all these, the most frequently reported drawback is related to technical problems, which constitute 50% of the total reported drawbacks.

4.1.2.3 Participants' Suggestions and Recommendations

In addition to reporting the benefits and drawbacks of hybrid learning, participants also provided a number of suggestions and recommendations. Firstly, participants recommend that the use of hybrid learning be continued in the future:

> Saya harapkan metode seperti ini dapat terus dipertahankan di semester depannya (B#48).
> I am very hopeful that this method (hybrid) will continue to be used in the coming semester.

> And I hope, the learning process like this can goes on for the next time (B#1).
> And I hope that the learning process like this would continue in the future.

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[44] This is normally done by the teacher to check students' attendance.

Others particularly emphasised the importance of the online mode of the hybrid instruction, primarily because these participants felt that it has many benefits; it is effective, interesting and enjoyable:

> *Saya harap bapak masih tetap menggunakan metode pembelajaran melalui internet kedepannya karena menurut saya metode ini sangat efektif dan efisien serta menarik dan menyenangkan (B#41).*
> I am very hopeful that you would continue to use the online learning method in the future because in my opinion this method is very effective and efficient and is interesting and enjoyable

> *Lastly, I hope study via internet must be continued because many advantage from it… (B#12).*
> Lastly, I hope that studying via the internet should continue (in the future) because of the many advantages it offers.

Others recommended hybrid learning to students who did not participate in the present study:

> *Saya berharap metode ini akan selalu bapak terapkan ke mahasiswa lain (B#46).*
> I am very hopeful that you will continue to use this method with other students (who did not take English Grammar that semester).

Interestingly, one participant also suggested that hybrid learning should be taken as a model by other teachers in their teaching, presumably because of her own positive experience with this method:

> *Saya harap model pembelajaran yang bapak terapkan kepada kami diambil sebagai model percontohan pembelajaran bagi dosen lain… (B#25).*
> I am very hopeful that the method that you applied to us could be taken as a model by other lecturers…

Obviously, this recommendation would not have been written if this participant had not a genuine belief and interest in this method in the first place.

In short, a number of participants in the present study recommended that hybrid learning, particularly the online section of it, be continued in the future, as they believed that they gained considerable benefits from it.

4.1.2.4 Conclusion for Research Question #2

Examining students' comments on their first hybrid learning experience, it is clear that students generally have very positive attitudes to and perceptions of hybrid learning. Reported advantages (frequency 82) far outnumbered the disadvantages (frequency 8). Listed from the most to the least frequently mentioned, the advantages of hybrid learning include:

> (a) fun/interesting/comfortable learning experience
>
> (b) gaining computer/internet literacy
>
> (c) quality learning
>
> (d) interactivity
>
> (e) course satisfaction
>
> (f) flexibility
>
> (g) socialisation (making friends)
>
> (h) easy access to course materials
>
> (i) self-testing, and
>
> (j) self-confidence gain.

As for the disadvantages, listed once again from the most to the least frequently mentioned, these were:

> (a) technical problems
>
> (b) preference for pure face-to-face
>
> (c) lack of computer literacy, and
>
> (d) decreased social relations.

Since the frequency of the reported advantages numbered ten times that of the drawbacks (82 versus 8), it is quite reasonable to conclude that hybrid instruction appears to be a highly viable learning environment for this student population. In fact, many of the participants expressed their hope for more hybrid learning in the future.

4.1.3 Research Question #3: What are students' general impressions of and attitudes to traditional face-to-face instruction in the teaching/learning of English Grammar?

a. What are the perceived advantages and disadvantages/drawbacks of such a learning environment?

b. Do the advantages outweigh the disadvantages?

c. What suggestions do they have for future classroom instruction?

To address the above questions, students' comments on their experience with traditional face to face classroom instruction in the teaching of English Grammar will be analysed descriptively by identifying emerging topics/themes concerning (a) the benefits of face to face instructions, (b) the drawbacks of such a learning environment, and (c) participants' suggestions or recommendations. Comments that belong to the same category (i.e. benefit, drawback and suggestion) will be grouped together and the frequency of the emergence of such themes will be shown. Possible links among themes will be identified and discussed when relevant.

In the following section, comments regarding the benefit of traditional face-to-face instruction from the standpoint of the participants will be discussed first, followed immediately by comments regarding the drawback of such a learning environment and students' suggestions and/or recommendations.

4.1.3.1 Perceived Advantages of Classroom Instruction

As far as the students are concerned, the benefits of classroom instruction, (frequency of total reported benefit = 152) can be broken down into nine different but inter-related themes, listed from the most to the least frequently mentioned:

(a) teacher immediacy

(b) interesting/enjoyable learning experience

(c) quality learning

(d) classroom community

(e) access to direct explanation from the teacher

(f) gain self-confidence to speak English

(g) interactivity

(h) preference for face-to-face, and

(i) equal participation.

4.1.3.1.1 Teacher Immediacy

The overwhelming majority of the participants reported that one of their most valuable learning experiences when attending classroom instruction over the course of the semester concerned teacher immediacy – a concept that will be discussed further below. The frequency of students' positive comments regarding teacher immediacy was 58. To begin with, participants reported that they liked the teacher's teaching techniques, which in their view have enabled them to absorb the course materials easily:

> The lecturer of English Grammar is a good lecturer…He also teach us with a good method. So that, we can easy understand the lesson (C#12).
> The lecturer of English Grammar is a good one…He also teaches us with a good method, so we can understand the lesson easily.

Participants also appreciated the fact that the teacher employed more than one method (lecture, small group discussion, etc.) in his teaching, making the class even more interesting:

> His ways to explain the material is interesting because he uses more than one method when he explain the material (C#53).
> The way he explains course materials is interesting because he uses more than one method.

Due to the application of the above methods, the classroom environment becomes more dynamic and lively. In this situation, the students were neither bored nor anxious during the learning process. Students reported that this situation helped them learn course materials:

> Dosen mata kuliah ini juga pandai menciptakan suasana ruangan yang begitu hidup sehingga hal tersebut memudahkan kami untuk menerima materi, tanpa merasa bosan atau gugup dalam proses belajar mengajar mata kuliah grammar (C#39).
> The lecturer (of this unit) is also good at creating a lively classroom environment which made it even easier for us to understand course materials, without feeling bored or nervous during the teaching-learning process of the grammar class.

Furthermore, participants also made a positive comment concerning the fact that the teacher was willing to repeat his explanations, particularly when it comes to course materials that most students seemed to have a problem with:

> Beliau dengan sabar mau mengulang materi yang belum kami mengerti (C#20).
> The teacher was patiently willing to repeat (his explanations for) materials that we had not yet understood.

Repeating explanations of certain materials, particularly those that are considered more intricate, serves at least two different purposes. Firstly, it provides more opportunities for those who still have problems understanding those materials and, secondly, it serves as reinforcement for those who have already developed a good understanding in the first place, thus benefiting all students. Additionally, providing examples that are easy to understand was also appreciated by these participants. For example, when teaching tenses in English, providing simple sentences, rather than complex ones appeared to serve as effective scaffolding for these students. This way, participants could directly observe changes in the verb form and this helped them understand how a given tense in English is different from or similar with the others (simple present, simple past, future tense, etc.). More intricate examples were given once the participants had developed a good understanding of the basic principles underlying each topic and participants seemed to appreciate this approach:

> Beliau juga dalam menerangkan suatu materi selalu menyertakan contoh-contoh yang mudah dipahami (C#20).
> Additionally, when explaining course materials, he also provided us with examples which were easy to understand.

Furthermore, as far as teacher's teaching styles are concerned, participants also repeatedly mentioned that they enjoyed the fact that the teacher looked relaxed and occasionally used humour in his teaching. Humour and jokes, as well as personal experiences, were used as an ice breaker in each session and were aimed at creating a psychological and social closeness (i.e. reducing a psychological and social barrier) between the teacher and the students. They were also used to attract

students' attention and to get them involved, particularly when they were distracted. As is evident from participants' comments, this strategy is highly valued by many of the participants. In fact, participants appeared to link the use of humour in the teaching with good teaching methods:

> I think method of teaching is good. Lecture looks relax and have sense of humour…(C#44).
> I think his teaching method is good (I think he has a good teaching method). The lecturer looks relaxed and has a sense of humour.

> …selain itu dosennya juga adalah orang yang humoris sehingga siswa tidak mengantuk, apalagi pelajarannya itu adalah waktu tidur siang. (C#41).
> …in addition, the lecturer also had a good sense of humour; so, the students did not fall asleep (during his teaching), particularly given the fact that the class timetable coincided with a nap time.

> Dosen juga sering bercanda dalam membawakan materi, sehingga kami yang tadinya tegang menjadi santai, kami sangat senang mempelajari Grammar… (C#51).
> The lecturer also made jokes in his teaching. We were originally tense (nervous), but owing to his jokes/humour, we became relaxed. We really enjoyed learning Grammar…

> …sometimes he told us joke, so were not bored… (C#6).
> …sometimes he told us some jokes, so we were not bored (we did not get bored).

Another positive experience reported by the participants is related to the teacher's social relationship with his students. In particular, students perceived that the teacher is open, friendly and often smiles. As is the case with the use of humour discussed above, many students associate a teacher's personal character (open, friendly, often smiles) with good teaching technique and they have very positive views about this:

> The lecturer is open and friendly (C#10).
> The lecturer is open and friendly.

> The lecturer is a good lecturer because he is a friendly lecturer and every student like him. He have a good technique to teach and I like that (C#16).

> The lecturer is a good one because he is friendly and every student likes him. He has a good teaching technique and I like that.
>
> ...lecturer who teaches in grammar I is very friendly, kind, always smile (C#50).
> … the lecturer teaching Grammar I is very friendly, kind and always smiles…

Another important learning experience reported by the participants concerns the way the lecturer speaks when giving a lecture. In particular, participants appreciated the fact that the lecturer spoke slowly and clearly when explaining course materials:

> The lecturer was very good in teaching...If he spoke in English I can understand what you say because you spoke slow and clear. I like that... (C#35).
> The lecturer was very good in teaching…If he spoke English I could understand what he said because he spoke slowly and clearly. I like that…

Finally, students expressed their positive views concerning the fact that the teacher treated all his students the same:

> Disamping itu Bapak tidak membeda-bedakan antara siswa yang satu dan yang lain (C#44).
> Besides, you treated all the students the same (you did not treat the students differently).

In all excerpts presented above, participants expressed their positive impression of the class they attended and this positive learning experience has particularly been attributed to factors related to the teacher (i.e. the teacher employs a good teaching technique, creates an interesting and lively classroom by employing more than one teaching method, repeats certain materials that the students still have a problem with by providing easy-to-understand examples, looks relaxed when teaching, is open and friendly, smiles, uses humour or makes jokes, speaks slowly and clearly, treats all students the same, etc. In education and communication literature, these qualities are referred to as teacher immediacy.

Teacher immediacy is not a new concept. The term 'immediacy' can be defined as "those communication behaviours that reduce perceived distance between people" (Thweatt & McCroskey 1996 p. 198). Thus, teachers who are highly immediate would be perceived by the students as psychologically and socially closer compared to those who are not. In other words, non-immediate teachers encourage greater psychological distance between themselves and the students (Allen, Witt & Wheeless 2006).

Teacher's immediate behaviours can either be verbal (i.e. addressing students by name, use of humour, using personal stories, etc.) and non-verbal (i.e. smiling, movement around the classroom, touch, eye contact, etc.) (Neuliep 1997). Echoing the findings reported by previous studies, Neuliep concludes that teacher immediacy plays a significant role in both students' cognitive and affective learning, in that, students perceived that they learn more when taught by highly immediate teachers. In other words, teacher immediacy is associated with effective teaching (Chesebro & McCroskey 2001). This conclusion is consistent with findings reported in other studies (e.g. Messman & Jones-Corley 2001) and appears to agree with those of the present study whereby students reported that a teacher's teaching techniques/style and a teacher's characteristics have enabled them to learn course materials and, as a result, they expressed their positive attitude to and impression of the classroom instruction they attended that semester.

Furthermore, teacher immediacy behaviours have also been reported to increase students' motivation (Allen, Witt & Wheeless 2006; Christophel 1990). In other words, students taught by a highly immediate instructor are expected to be more involved and enthusiastic in their learning than those taught by teachers who are not immediate (Allen, Witt & Wheeless 2006). Students' excerpts presented above clearly suggest that the teacher is considered immediate by the students and they have expressed their enthusiasm with and positive attitude towards the course as a result.

Put simply, teacher immediacy is reported as one of the main advantages of traditional face-to-face instructions by the participants. Findings of the present

study provide strong support concerning the importance of a teacher's immediate behaviours in the classroom as reported in previous studies.

4.1.3.1.2 Interesting/Enjoyable Learning Experience

Another reported benefit of classroom instructions is that it affords an interesting and enjoyable learning experience (frequency of reported benefit: 41) in such a way that students feel relaxed and comfortable in their learning:

> Singkatnya saya senang belajar Grammar. Cara penyampaian materi juga tidak membosankan (C#19).
> In short, I enjoy studying Grammar. The way the materials are taught is not boring.

> I like this class so much… This is a fun class, and I love this class (C#18).
> I like this class so much… This is a fun class and I just love it.

Amongst the reasons that made the class interesting is that the teacher explained course materials comprehensively and clearly:

> Saya sangat menyukai mata kuliah ini, sebab dosen mata kuliah ini selalu menjelaskan materi-materi tentang mata kuliah grammar secara lengkap dan jelas (C#39).
> I like this subject very much because the lecturer teaching this subject always explains course materials comprehensively and clearly.

Needless to say, as far as teaching is concerned, being able to teach clearly is one of the most important skills required of the teacher. Chesebro (2003) wrote "The ability to teach clearly so that students can understand course material is fundamental to teaching" (p. 135). This is simply because not only do the students learn more effectively when taught by a clear teacher, but they also develop a more positive attitude towards both the teacher and the subject (Chesebro 2003; Chesebro & McCroskey 2001). In other words, teacher clarity is critical to both students' attitudes towards the unit and their learning outcomes. Comments provided by the students, as well as their academic achievement as indicated by the test scores, appear to confirm this contention.

Furthermore, the fact that the students perceived the teacher as a clear speaker may also be attributed to teacher immediacy as discussed in the previous section. In fact, as a previous study suggested, "nonverbal immediacy may facilitate the impact of clear teaching by gaining students' attention during lectures" (Chesebro 2003 p. 136). To clarify his point, the author argues that teachers can teach clearly only if the students are paying close attention to what the teacher is saying.

In this case, not only did the students report that the unit was interesting, but they also believed that it was very useful for them:

> Mata kuliah ini sangat menarik dan sangat berguna (C#51).
> This subject is very interesting and useful.

> Jadi, sekarang saya bisa mengatakan kalau grammar itu menarik dan bermanfaat (C#7).
> Therefore, I could now say that the unit (English Grammar) is both interesting and useful.

Interestingly, other students reported that they originally did not like studying English Grammar[45], but after taking the unit, they became more interested in this subject:

> Saya telah mengatakan bahwa dulu saya tidak suka belajar grammar, tapi sekarang itu berbeda karena saya suka belajar grammar. (C#52).
> I have said that, in the past, I did not like studying (English) grammar. This, however, has changed because I have come to enjoy it (studying grammar).

> Pertama kali, saya berpikir bahwa akan sangat membosankan mempelajari mata kuliah ini karena apa yang akan saya pelajari hampir sama dengan apa yang saya pelajari di SMA lalu…Meski materi yang diajarkan pada dasarnya hampir sama dengan apa yang diajarkan, tetapi di dalam kelas, situasi dan kondisi belajar menjadi jauh lebih menarik…saya sangat menikmati perkuliahan ini (C#17).
> At first, I thought that it would be boring to study this subject because what I would learn was basically identical to that taught in high school… Although course materials were basically similar, classroom

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[45] This is presumably based on their experience studying English Grammar in both Junior and Senior High School.

environment was much more interesting in this class… I really enjoy this subject.

Finally, one student reported that English Grammar was one of her favourite units that semester:

English Grammar is one of my favourite subject in this term (C#22).
English Grammar is one of my favourite subjects this semester.

In short, the overwhelming majority of the participants in the present study reported that English Grammar is an interesting subject. Although some of them originally did not share this view, these participants reported that they finally came to enjoy the subject after attending traditional classroom instruction over the course of the semester. Students' positive comments are partially attributed to the clear teaching – a concept that is discussed in the previous section.

4.1.3.1.3 Quality Learning

A significant number of participants in the present study reported that they have experienced quality learning as a result of attending classroom instruction over the course of the semester (frequency of reported advantages: 30). For example, some participants reported that they now have developed a better understanding of course materials taught that semester:

Sekarang, saya sungguh telah dapat memahami bagian-bagian dari Part of Speech dan beberapa Tenses yang umumnya digunakan setelah mempelajari materi ini (C#11).
Now that I have, indeed, been able to understand the Parts of Speech and some common tenses after learning this subject.

Setelah mengikuti mata kuliah Grammar I selama satu semester saya lebih memahami tentang tata cara penggunaan tenses (C#3).
After attending English Grammar I over the course of the semester, I've now developed a better understanding of how to use tenses (in English).

As participants feel that attending classroom instruction has helped them develop a better understanding of course materials, it is quite reasonable to expect that

they also reported an improvement in their knowledge of English Grammar, particularly with regard to tenses and the parts of speech – two topics covered in the syllabus:

> My English Grammar significantly improved as a result of this unit (C#48).
> My English Grammar has significantly improved as a result of this unit.
>
> Selama mengikuti grammar I, saya merasa ada peningkatan utamanya dalam belajar 'tenses' dan 'part of speech'. (C#44).
> Attending English Grammar I, I feel there is an improvement (in my knowledge), especially in the area of 'tenses' and 'the parts of speech'.

Interestingly, one student also reported that she originally felt that the unit was extremely difficult for her and implied that she did not like the subject. However, after attending classroom instructions over the course of the semester, not only did she believe that her knowledge of grammar had improved, but most importantly, she also felt that she started to like the subject:

> Pertama mengikuti mata kuliah ini, saya merasa mata kuliah ini sangat sulit. Namun setelah mengikutinya selama satu semester saya merasa pengetahuan saya tentang mata kuliah ini meningkat dan itu membuat saya mulai menyukai mata kuliah ini (C#43).
> The first time I attended this class, I had the impression that the unit was extremely difficult. However, after attending the class over the course of the semester, I now feel that my knowledge of this subject has improved and I start to love this subject.

Whilst participants reported that they developed a good understanding of course materials and, consequently, perceived that their knowledge of English Grammar significantly improved as a result, other participants also reported that their general English language proficiency improved:

> Faktanya, selama mempelajari grammar pada semester ini, kemampuan saya dalam berbahasa Inggris sedikit meningkat... (C#29).

> The fact is, after attending English Grammar class this semester, there is somehow an improvement in my English language proficiency.

Furthermore, participants also reported an improvement in their speaking skills, which is consistent with a report on the increase of their confidence to speak English as reported in another section of this chapter (see section § 4.1.3.1.6 for more details):

> Selama belajar Grammar saya merasa ada peningkatan pada kemampuan bahasa Inggris saya, terutama speaking (C#20).
> Attending the grammar class, I feel that there is an improvement in my English language proficiency, particularly speaking.

Although it was the grammar class that the students attended, they also had an opportunity to practice their speaking skills in a small group using course materials that they had just learned (e.g. conversing with a partner using simple present tense, simple past tense, etc.). Thus, it is not surprising that some students also reported that their speaking skills had improved as a result of these activities:

> …dosen juga meminta kami untuk mempraktekan materi yang telah dijelaskan. Dengan cara ini kami bercakap dengan teman sehingga bukan hanya kemampuan Grammar kami saja yang meningkat tapi juga kemampuan Speaking kami juga dapat meningkat (C#6).
> …the lecturer also got us to practice course materials that we have learned (with friends in the classroom). That way, we have a chance to converse with classmates in such a way that it is not just our grammar knowledge that improved, but also our speaking skills.

Finally, one participant also reported that her writing skills also improved as a result of the class she attended that semester:

> Kedua, writing saya juga jauh lebih baik karena pola-pola kalimat yang saya gunakan dapat lebih terarah… (C#7). Secondly, my writing skills have also improved because my sentence structure is now becoming well-structured…

Obviously, as participants develop a better understanding of tenses and the parts of speech in English, they also become more aware of the intricacies of sentence

structure in this language. This knowledge of sentence structure is particularly useful when it comes to writing. It is, therefore, unsurprising that the above participant also reported an improvement in her writing skills.

To sum up, participants in the present study reported that they experienced quality learning as a result of traditional face-to-face classroom instruction. In particular, they reported that their knowledge of grammar improved significantly over the course of the semester. The validity of this report is confirmed by quantitative data analyses where a statistically significant increase in students' post-test scores, relative to their pre-test scores, was noted (see section § 4.2.1.1 - § 4.2.1.3 for further information). Additionally, participants also reported improvement in their speaking and writing skills, which further justifies the above conclusion that classroom instruction offers quality learning.

4.1.3.1.4 Classroom Community

Another benefit of classroom instruction reported by the participants concerns their harmonious relationships with their classmates and the teacher (frequency of reported advantages: 9). In particular, students reported that they helped, supported, and cared about one another in their learning, irrespective of their personal backgrounds. This provides a clear evidence of the existence of a classroom community:

> Komunikasi antara mahasiswa dan dosen serta antara sesama mahasiswa terjalin dengan baik. Dalam proses belajar mengajar saling membantu antara satu sama lain tanpa terkeculai (C#31).
> There was good communication between the students and the teacher and among the students. Students helped one another during the teaching and learning process, irrelevant of their backgrounds.

> Hubungan kami sesama mahasiswapun selalu baik. Kami selalu saling membantu dalam hal pelajaran. Satu dan yang lain saling mendukung. (C#26).
> We've always had a good relationship with other students (in the class). We always helped each other in our learning. Students supported one another.

Since students had good relationships, helped and supported one another in their learning, help and assistance from classmates was always available when needed. This created a sense of security among the students, knowing that they could always turn to their classmates if they had some problems in their learning. Given the significant contribution of classmates in one's learning, it is not surprising that some students attribute their progress in the unit to their classmates:

> Faktor lain dalam kemajuanku ini karena adanya teman-teman yang selalu siap membantu dalam mempelajari grammar tersebut... (C#29). Another factor contributing to my progress (in this class) is my friends who are always wiling to help in learning grammar…

Interestingly, other students also reported that the small group discussion they had in the classroom, whereby they could discuss ideas or practice course materials in a small group, has enabled them to develop a good relationship with other students. In particular, participants feel that the small group activities have positively affected their relationship with other students in the classroom:

> Tugas yang diberikan kepada kami secara kelompok juga sangat berpengaruh pada kekompakan kami (C#26). The group work has a significant effect on our accord (harmonious relationship?).

Thus, it appears that small group discussion also plays a significant role in creating a classroom community as mentioned above. Obviously, during small group discussion, participants interact with and help one another with the task at hand. These dynamic interactions among the students pave the way for the creation of a classroom community (Lichtenstein 2005). Furthermore, not only does a small group play a critical role in the creation of a classroom community, it is also crucial in cognitive and affective learning. It has been argued that students might communicate more effectively amongst themselves simply because their peers' language is sometimes more comprehensible than the teacher's. As Bejarano (1987) writes, "…peers in small groups are more likely to employ language comprehensible to each other than the teacher and, when the need arises, to ask each other to clarify meanings" (p.496).

Not only do small group strategies promote meaningful interactions among the students, and therefore a sense of classroom community, but it also encourages students to share ideas and discuss issues related to the task at hand. This involves challenging each other's ideas or clarifying arguments – a process indispensable to critical thinking. In other words, small group strategies are crucial for both a sense of community and critical thinking.

In short, participants attending traditional face-to-face classroom instruction reported that the class they attended promoted a rich social interaction; they help and support one another in their learning and they care about other classmates' wellbeing in the classroom. Put simply, these students reported a perceived sense of classroom community – a feeling that is highly appreciated by these participants.

4.1.3.1.5 Access to Direct Explanation from the Teacher

Another benefit of traditional classroom instruction reported by the participants in the present study is that they could have access to a teacher's explanation during classroom sessions with the teacher[46] (frequency of reported benefit: 5). Because the teacher is physically present in the classroom, the students could always ask questions for clarification regarding course materials. Because of this, face-to-face classroom instruction is considered by these students to be more efficient, thus more preferable:

> …lebih efisien bagi saya jika penjelasan dari materi ini didapatkan langsung dari dosen, karena kita lebih mudah untuk memperoleh penjelasan jika mendapatkan masalah dalam proses pembelajarannya karena dapat bertanya apapun yang belum kita mengerti (C#11).
> … for me it is more efficient to listen directly to teacher's explanation of course materials because it would be easier to get further explanation/clarification in case there are problems during the learning process because I could ask anything that I have not understood yet.

> Hal itu membuat kami mempunyai banyak kesempatan untuk bertanya tentang hal-hal yang berkaitan dengan mata kuliah Grammar yang selama ini membingungkan kami (C#39).

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[46] This theme is still related to teacher immediacy, but is focused on having access to the teacher's explanation in the classroom.

> That way, we have a lot of opportunity to ask questions concerning English Grammar which has always been confusing for us.

Note that, as far as the importance of a teacher's presence in the classroom is concerned, participants seem to put a particular emphasis on understanding course materials and the need to ask for further clarification. In other words, these students appear to feel more secure if the teacher is physically present in the classroom, knowing that he is there to help them if needed. For these students, the absence of the teacher may result in the feeling of being vulnerable, particularly at times when they are desperately in need of a teacher's explanation or further clarification concerning course materials.

Obviously, as mentioned previously, some students still consider the role of the teacher in the classroom to be one of the most important factors in their learning. In fact, as expressed by a small number of participants attending a pure online format, for example, the absence of the teacher resulted in the feeling that the class is lacking in teacher's monitoring/supervision which, in turn, made them either demotivated or reluctant to participate (see § 4.1.1.2.4 for further details). It is not surprising, therefore, that students attending traditional classroom instruction expressed their appreciation of the teacher's physical presence in the classroom, knowing that their queries would be attended to immediately by the teacher.

Additionally, some students attending hybrid instruction also reported that they understand course materials better if taught directly by the teacher. Obviously, during face-to-face sessions, not only could the students have access to a teacher's direct explanation and ask questions for clarification, but they could also observe a teacher's verbal and non-verbal cues such as body language, tone, etc., which could sometimes be instrumental to comprehension. By the same token, during face-to-face classroom instruction, particularly during small group discussion, participants could also observe their classmates' verbal and non-verbal cues, thus enabling them to respond appropriately to the learning situation (i.e. asking for further clarification, expressing agreement or disagreement, etc.).

Furthermore, other students also reported that studying in a face-to-face learning environment enabled them to get sufficient/adequate explanation from the teacher. As mentioned above, with face-to-face instruction, participants could always ask questions concerning course materials that they have not understood yet, and they could also ask for further clarification from the teacher if necessary. Since this process occurs in a face-to-face interaction where students also benefit from teacher's verbal and non-verbal cues as mentioned above, it is not surprising that some students reported that they got a more adequate explanation during face-to-face classroom instruction:

> Disamping itu, dengan belajar secara langsung kita akan mendapatkan penjelasan lebih memadai… (C#11). Besides, studying in a face-to-face learning environment enables us to get adequate explanation (from the teacher).

> Dan apabila kami belum memahami materi yang diberikan, kami dapat menanyakan materi tersebut atau masalah lain mengenai grammar (C#23).
> And if we still haven't understood course materials, we could (directly) ask questions related to those materials or ask other questions related to grammar.

To sum up, participants in the present study reported that one of the benefits of traditional classroom instruction is that they could always have access to an immediate teacher's explanation and they could also ask for further clarification, if necessary, in face-to-face interaction with the teacher. Perhaps most important of all, the physical presence of the teacher in the classroom appears to afford a sense of security among these students, knowing that they could always get help from the teacher when they encountered a problem in their learning.

4.1.3.1.6 Gain Self Confidence to Speak English

A number of students attending traditional classroom instruction reported that after attending the grammar class over the course of the semester, there was an increase in their confidence to speak English (frequency of reported advantages: 4):

> Banyak hal yang berubah setelah saya belajar grammar. Pertama saya lebih percaya diri dalam berbicara bahasa Inggris (C#7).
> Many things have changed (in me) after studying grammar. Firstly, I now become more confident to speak English.
>
> Saya merasa lebih percaya diri untuk berbicara dengan lawan bicara saya (C#20).
> I now become more confident to speak (English) with my interlocutor.
>
> I feel that my self confidence in speaking English is increasing (C#48).
> I feel that my self-confidence in speaking English has now increased.

Not only do the participants feel that their own self-confidence has increased, but they have also noticed that their classmates have also become more confident in both speaking and writing. As one student wrote:

> Perubahan serupa juga saya lihat terjadi pada teman-teman saya yang lain. Mereka lebih percaya diri untuk berbicara bahkan menulis (C#7).
> I notice that such a change (in self-confidence) is also experienced by my classmates. They become more confident in speaking and even writing.

Changes in participants' self-confidence, particularly as far as their confidence to speak English is concerned, may be attributed to a number of factors. Firstly, as mentioned previously, during classroom instruction, participants were also assigned to a small group discussion where they could put their grammar knowledge into practice in a conversation with their group mates:

> …dosen juga meminta kami untuk mempraktekan materi yang telah dijelaskan. Dengan cara ini kami bercakap dengan teman sehingga bukan hanya kemampuan Grammar kami saja yang meningkat tapi juga kemampuan Speaking kami juga dapat meningkat (C#6).
> …the lecturer also asked us to practice course materials that we have learned (with friends in the classroom). That way, we have a chance to converse with classmates in such a way that it is not just our grammar knowledge that improved, but also our speaking skills.

As these activities involve speaking, and as participants become acclimatised to conversing in English in this small group discussion, it is quite possible that the

increase in students' self-confidence may be attributed to these small group activities. Another possible explanation to students becoming more confident is simply because they may perceive that their knowledge of grammar has significantly improved, thus making them more confident to speak English. In fact, follow-up interviews with some participants suggest that grammar knowledge is considered by many to be the most important aspect of English language learning. In this case, a lack of the knowledge of grammar could be detrimental to students' confidence to speak English. In comparison, perceived improvement in one's grammar knowledge could boost his/her self-confidence. This is particularly true for many students who are reluctant to speak English to avoid making grammatical mistakes.

4.1.3.1.7 Interactivity

Another benefit of classroom instruction reported by the students concerns the dynamic interaction[47] they experience in the classroom (frequency of reported advantages: 3), particularly during small group discussion where participants share and discuss ideas, challenge each other's views, or simply practice course materials with classmates:

> ...the lecture also asked us to practice the material... By this way, we can talked to other friends... (C#6).
> …the lecturer also asked us to practice the material that we have learned (with friends in the classroom). That way, we can talk to other friends…

Participants highly value the dynamic interaction they experience in the classroom, which they regard as fun, interesting and enjoyable:

> I like his way of teach, full of interactive and we have a lot of fun in grammar class (C#10).
> I like the way he (the lecturer) teaches us. It's highly interactive and we had a lot of fun in grammar class.

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[47] As discussed earlier, this dynamic interaction plays a significant role in the creation of a classroom community.

The importance of social interaction in students' learning is well-documented. For example, echoing cognitive views of the role of interaction, Springer *et al.* (1999) commented "interactions among students increase achievement because of more intense information processing" (p. 25). Obviously, during dynamic interaction, students not only share and discuss ideas, but they also challenge each other's views, offer different interpretations or alternatives, ask for clarification, etc. – a process which, to a large extent, involves critical thinking and deep information processing.

Social interaction constitutes the major tenet of the well-known constructivist theory of learning which postulates that knowledge is constructed through social interactions, rather than transferred from the teacher to the students (see section § 2.1.1 for further discussion of constructivist theory). Arguing from a constructivist perspective, Huff (2000) wrote "…interactions among students and between students and teachers are important components of the learning process" (p. 404). This is simply because social interaction and learning itself are inseparable, in that learning is inherently social in nature.

Multiple studies in the field of education have indicated that not only do students highly value interactive classes, but they also believe that they would learn more from such classes. It is for this reason that the use of activities that promote interaction among the students and between the students and the teacher in the classroom have increasingly gained popularity across different fields and is considered to be a key to learning success.

One way to achieve a dynamic interaction among the students and between the students and the teacher in the classroom is by means of a small group discussion strategy. Previous studies have shown the positive effect of a small group strategy in the classroom. For example, a meta analysis of the role of a small group technique indicates that small group techniques result in both higher achievement and students' positive attitudes to learning (Springer, Stanne & Donovan 1999). The findings of the present study appear to support this contention, as can be seen from students' comments and the result of their test scores.

In short, participants attending traditional classroom instruction reported that they benefit from the dynamic interactions they experienced in the classroom and they appear to value this experience highly. These findings are consistent with those of previous studies concerning the role of social interaction in students' learning and the role of small group strategies in promoting social interactions.

4.1.3.1.8 Preference for Face-to-Face

One participant explicitly mentioned the superiority of face-to-face instructions over both online and hybrid instructions (frequency of reported advantages: 1):

> Jika dibandingkan dengan metode yang lain seperti belajar di Internet atau menggabungkan dengan cara belajar tatap muka saya pikir face to face lebih bagus (C#41).
> In comparison with other methods such as online or hybrid instructions, I believe that face-to-face is still the best.

This comment reflects on the student's belief in the effectiveness of traditional face-to-face classroom instructions compared to the other methods such as pure online and hybrid methods.

What is interesting here is the fact that this participant has even come to believe that traditional classroom instruction is more effective than the other two methods (online and hybrid) before she herself has even had the experience with the other methods. Obviously, studying in a new learning environment, such as in a pure online environment, would require that students move out of their comfort zone. Additionally, in this new learning environment, they may need to develop new learning strategies that best suit their personal characteristics (learning styles, etc.). Unfortunately, for some students, this could be a daunting and intimidating experience, particularly where such a method relies heavily on technology, which is exactly the case with online and hybrid instruction. In other words, whilst some students may be willing to try new and challenging approaches to learning, and may, in the end, find the new learning experience enjoyable and rewarding[48], there

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[48] This is exactly what has been reported by some participants attending pure online instruction, where they originally reported to have a great doubt in online learning but, over time, they found this new learning experience enjoyable and rewarding.

are always students who resist the introduction of a new learning method simply because they do not want to move out of their comfort zone. However, such a belief may change as they become more familiar and comfortable with or as they become more capable of functioning in the new environment. However, it can never be safely assumed that all students would, for example, favour online learning as their computer skills have improved. In fact, there are students with excellent computer skills, yet they still prefer traditional face-to-face classroom instruction. Needless to say, familiarity with technology is just one factor. Other factors such as students' personal characteristics as mentioned above also come into play.

4.1.3.1.9 Equal Participation

The last benefit of classroom instructions reported by one participant (frequency of reported advantages: 1) concerns equal participation, in that, the participant feels that she has an equal opportunity to ask and answer questions during traditional face-to-face classroom sessions:

> Every student has a chance for ask and answer the question... (C#36).
> Every student has a chance to ask and answer questions.

It is worth mentioning, however, that whereas every student is granted an equal opportunity to participate in any classroom activities, including when asking and answering questions as mentioned by the above participant, it is clear that not everybody is comfortable enough to do so. This is because, for some students, particularly for those who are shy or are afraid of making irrelevant points, this results in feelings of embarrassment, where participation in traditional face-to-face classrooms can sometimes be a daunting experience (see section § 4.1.1.1.6 for more discussion of this issue).

<div align="center">***</div>

To sum up, there are a number of positive learning experiences reported by participants in the present study as a result of attending traditional face-to-face classroom instruction over the course of the semester. The frequency of total

reported benefit of classroom instructions is 152, which is incredibly high compared to the benefit reported by students attending either online or hybrid formats. These reported advantages can, further, be divided into nine different, but inter-related, themes as discussed above. Of all these positive learning experiences, the most frequently reported is teacher immediacy (frequency: 58), followed by a report on an interesting/enjoyable learning experience (frequency: 41). However, there were also reports on the challenges of classroom instructions, which will be discussed immediately below.

4.1.3.2 Perceived Disadvantages of Classroom Instructions

There were relatively few comments on the challenges or disadvantages associated with classroom instruction from the standpoint of the participants. In fact, only two challenges, both of which are related to workload, have been reported.

4.1.3.2.1 Workload

Two participants attending traditional face-to-face classroom instruction reported that the workload for the unit (English Grammar I) was too heavy. In particular, these participants reported that there was too much content covered in each meeting and implied that they just could not cope with the pace of the instruction. As a result, it was difficult for them to grasp course materials:

> …dalam matakuliah ini terlalu banyak materi yang dibahas dalam satu mata kuliah sehingga cukup sulit bagi saya untuk mengingat materi yang diajarkan (C#15).
> …in this unit, there were too many materials covered in each meeting. Consequently, it is difficult for me to remember all materials that have been taught/learned.

> To be honest, this is the most difficult subject that I've ever learned. There are so much content in it (C#11).
> To be honest, this is the most difficult subject (unit) that I've ever taken/learned.

Obviously, each student has a different pace in terms of learning grammar. Whereas some students need a significant amount of time to properly digest course materials in each meeting, thus requiring extra time, others may find such extra time unnecessary. Spending too much time on a given topic or activity would certainly be beneficial for slow learners, but it could be boring or even demotivating for others. In this situation, it is very difficult, if not impossible, to satisfy every student's needs without sacrificing the needs of others. At the end of the day, this situation could be frustrating for both the students and the teacher.

In summary, the only concern expressed by participants attending classroom instructions in the present study was related to the fact that they found it difficult to cope with the workload demand (i.e. too much content covered for each meeting). In other words, they felt that they could not learn at their own pace in a traditional face-to-face classroom[49].

4.1.3.3 Participants' Suggestions and Recommendations

In addition to commenting on the benefit and challenges of classroom instructions, participants in the present study also provided a number of suggestions and recommendations as to how classroom instructions could have been improved. Participants' suggestions can broadly be divided into several categories including: (a) suggestions concerning use of games in the classroom, (b) suggestions concerning teaching technique, (c) suggestions concerning classroom facilities and (d) a suggestion to maintain the method.

To begin with, two participants recommended the use of games in the classroom. This recommendation regarding the use of games in the teaching of English Grammar is identical to that made by students attending the pure online learning format:

> …pada ahir pelajaran ada baiknya untuk bermain games tentang pelajaran yang telah kita bahas (C#44).

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[49] As discussed previously, online and hybrid formats appear to be more flexible in catering for students' learning pace, in that, students could learn at their own pace (an in-depth discussion of this issue will be provided in the next chapter). However, both formats also pose their own challenges and limitations.

> …at the end of the lesson, it would be a good idea to play some games related to the lesson that we've just learned.

> I have suggestion…play games related with our study in order to we as your student not feel bored (C#Anynomous).
> I have a suggestion… play games related to what we have studied/learned so that we, as your students, would not feel bored.

These comments clearly indicate that incorporating games in the teaching of English Grammar, particularly as far as EFL context is concerned, is highly desirable. Appropriate games could serve not only as a motivator, but also as effective reinforcement.

Furthermore, one participant also commented on how teaching techniques could have been improved. In particular, this participant recommended that the teacher walk around the class when teaching, rather than spending more time in front of the class:

> But he more spends his time beside front in the classroom, when he teach. I think he can walk around while explain the material, I think it is better (C#53).
> But he spends more time in front of the class when teaching. I think it is better if he could walk around the class when explaining the materials.

One student commented on the absence of such facilities as an LCD projector, etc., which in her view should have been there in the classroom:

> The classroom missing facilities such as LCD projector, etc. (C#Anonymous)
> The classroom does not have such facilities as LCD projector, etc.

Finally, another student recommended that the teacher maintain his teaching technique in the future as he believes that it is a good method:

> I hope the lecture can maintain the method which used to teach us, because I think it is a good method (C#6).
> I hope the lecturer can maintain the method which he used to teach us because I think it is a good method.

In other words, whereas one participant expressed his appreciation of the teaching method employed in the present study, others also believed that such methods could have been improved.

4.1.3.4 Conclusion for Research Question #3

Examining students' comments on traditional face-to-face classroom instruction attended over the course of the semester, it is obvious that the overwhelming majority of the participants expressed their very positive attitude towards classroom instruction. Traditional classroom instruction was perceived so favourably that the reported advantages (frequency: 152) far outnumbered the disadvantages (frequency: 2). Listed from the most to the least frequently mentioned, the advantages of classroom instruction include:

      (a) teacher immediacy

      (b) interesting/enjoyable learning experience

      (c) quality learning

      (d) classroom community

      (e) access to direct explanation from the teacher

      (f) gain self-confidence to speak English

      (g) interactivity

      (h) preference for face-to-face, and

      (i) equal participation.

The only disadvantage, which was reported by only two participants, was related to workload. Thus, it appears that the overwhelming majority of the participants in the present study highly value traditional face-to-face classrooms instruction.

4.1.4 Research Question #4: How similar/different are students' responses concerning the benefits and drawbacks of each of the three different modes of instruction: traditional face-to-face, online and hybrid? What themes are commonly shared and what themes are distinctive to a particular mode?

For the sake of the discussion, the benefits reported by participants in each of the three modes will be discussed first, followed immediately by a discussion of their corresponding drawbacks.

4.1.4.1 Reported Benefits of Each of the Three Modes

Students' responses concerning the perceived benefits of each of the three modes reveal some thematic similarities and differences. Some themes are shared by the three formats, some are shared only by two formats and others are specific to a particular format. Themes that occur across the three formats will be discussed first, followed by themes that occur in two formats and those that are distinctive to a particular format.

4.1.4.1.1 Themes Shared across the three Different Formats

Three major themes – (a) fun/interesting learning experience, (b) interactivity, and (c) quality learning – are reported by students across the three different groups. However, the frequency of these perceived benefits varied with the mode of delivery. For example, with regard to the course as being fun/interesting, the online section had a frequency of 29, face-to-face 41, and hybrid 29. This suggests that students in the face-to-face format appear to feel more strongly about their class being fun/interesting, although the other two groups (online and hybrid) also share this feeling to a large extent.

Interestingly, when it comes to interactivity, the second theme shared across the three formats, the online group has the highest frequency (frequency: 16) compared to the hybrid (frequency: 5) and face-to-face (frequency: 3) groups. In other words, students in the online section appear to have a stronger feeling about their experienced interaction with one another, even though they did not actually meet in a physical classroom over the course of the semester. This finding is particularly surprising and unanticipated. Common sense tells us that students engaging in classroom interaction have a more authentic and genuine interaction than those whose communication is mediated by computers. Therefore, it seems natural to expect that students engaging in face-to-face interaction would also have a more vivid experience about these social activities than the other groups,

which should then translate to more students in face-to-face format reporting on this experience. This, however, was not the case.

There are several possible explanations for this phenomenon. Firstly, unlike face-to-face, online interaction is not constrained by place and time. In other words, online students can engage in interaction with their classmates or the teacher, using both synchronous and asynchronous communication, any time, anywhere. Having said that, the total amount, and perhaps the quality of the interaction experienced by online students over the course of the semester could possibly be higher than that experienced by students attending in-class tuition, particularly given the constraints mentioned above. Secondly, unlike face-to-face students, students in the online mode are afforded a wide range of options concerning how they would like to communicate; they could use e-mail, the bulletin board or chat room, whichever suited them best. In other words, online communication is more flexible in terms of how the message is to be conveyed, and perhaps it is this flexibility that is particularly appreciated by the participants.

Surprisingly, the frequency of the perceived interactivity for the hybrid group is similar to that for the face-to-face group, and is much lower than that for the online group. It was originally thought that students in the hybrid group would report the highest frequency of interactivity, simply because they benefit from both face-to-face and online experience. This should, in turn, have translated to a richer experience of interactivity. This, however, was not the case. One possible explanation for this phenomenon is that students' experienced interactivity may have been interrupted by the total shift in the mode of interaction. Obviously, this could be an interesting avenue for future research.

Nonetheless, this finding appears to challenge the widely-held belief that online learning results in students experiencing alienation[50]. On the contrary, students in the present study reported that they experienced meaningful interaction between themselves and with the teacher. Of course, the result may have been different if any of the communication media mentioned previously (bulletin board, chat room, email) had not been provided, and, perhaps most importantly, if the

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[50] Students experiencing alienation is perhaps one of the most frequently cited drawbacks of online learning in the literature.

instructional design itself had not promoted interaction among the students in the first place. In other words, as discussed earlier, both technology and pedagogy play a crucial role in promoting interaction amongst the students. No matter how communicative the instructional design is, if technology employed does not support the application of such a design, it is of little use. By the same token, no matter how sophisticated the technology is, if its application is not grounded on sound pedagogy, not much will be achieved.

The last common theme reported by the students across the three different groups concerns the quality of learning whereby the three groups reported that they all experienced quality learning as a result of attending one of the three different modes of instruction over the course of the semester. With regard to this theme, the face-to-face group has the highest reported frequency (frequency: 30), followed by the hybrid mode (frequency: 8) and the online mode (frequency: 7). In other words, face-to-face students appear to have the strongest feeling concerning the experience of quality learning. Obviously, the term 'quality learning' goes beyond students' post-test scores. It involves all sorts of experiences that the students get as a result of taking the unit over the course of the semester.

In short, three major themes – a fun/interesting learning experience, interactivity, and quality learning – are reported by students across the three different groups. It appears, therefore, that students in these different groups have an appreciation of the learning experience regardless of the mode of tuition they attended. However, there are also themes that are shared by only two groups, discussed immediately below.

4.1.4.1.2 Themes Shared across two Different Groups
Some themes occured only in two groups: online and hybrid. These include gaining computer literacy (online: 19, hybrid: 23), opportunity for self-testing (online: 9, hybrid: 1), flexibility/accessibility (online: 5, hybrid: 3), socialisation/making friends (online: 3, hybrid: 3), and easy access to course materials (online: 2, hybrid: 3).

Whilst such themes as gaining computer literacy, flexibility/accessibility, and easy access to course materials have always been cited in previous studies as amongst the benefits of online learning, their appearance here does not come as a surprise. The theme of socialisation and making friends, however, is particularly interesting. Although the frequency in this report is not high, it further confirms the fact that online communication does afford the students the experience to socialise with others. This finding appears to challenge the widely-held belief that online learning results in students experiencing alienation, as mentioned in the previous section.

Interestingly, none of the students in the face-to-face section reported that they shared this experience of socialising and making friends, which is surprising given the fact that they have face-to-face interaction. There are several possible reasons for this. Firstly, as mentioned earlier, in-class communication is constrained by place and time, in that socialisation and communication amongst the students occurs in a certain time and place. In comparison, online socialisation and communication is not constrained by these variables, thus enabling every student to communicate with others whenever (time) and wherever (place) they want to. Secondly, unlike the classroom environment where students communicate and socialise mostly with their classmates, online students' communication goes beyond the wall of the classroom. In fact, as reported previously, some students were also involved in chatting and socialising with native speakers from an English-speaking country – a benefit which in-class students did not get. It is, therefore, not surprising that online students reported this experience of socialisation and making friends while engaging in online interaction.

Another interesting finding is the report concerning the opportunity for self-testing. Whilst students in all groups were provided with various quizzes within each meeting (including in-class students), only students in the online and hybrid modes reported quizzes as beneficial for their learning (online: 9 hybrid: 1). One possible explanation for this phenomenon is that, unlike students doing online quizzes where feedback for their answers is immediately provided by computer as soon as they click the 'submit' button, in-class students had to

consult the answer key provided by the teacher to check their answers. Perhaps it is this experience of receiving immediate and interactive, rather than delayed, feedback that makes their experience different, thus explaining their appreciation of quizzes. Obviously, this could be an interesting avenue for further research.

Another theme reported only in online and face-to-face groups is the enabling of reluctant students to participate. In particular, online students reported that the nature of the communication medium enables them and their friends to comfortably participate in online discussion (frequency: 6). This finding is in agreement with that reported in previous studies (e.g. Freiermuth 2001). Additionally, online students also reported that they find participating in a face-to-face classroom environment intimidating and that the online environment is less-threatening for them (see section § 4.1.1.1.6 for further details). Similarly, one student in the face-to-face section also noted that every student is afforded an equal opportunity to participate (frequency: 1). However, affording equal opportunity to participate in a face-to-face classroom does not necessarily result in real participation. As mentioned previously, 'cultural and social norms' (Freiermuth 2001) could sometimes prevent the students from participating freely in a face-to-face classroom.

Still, another theme – gaining self-confidence – occurs in both face-to-face (frequency: 4) and hybrid modes (frequency: 1). However, this theme also occurs in the online section, but it is discussed under quality learning section (see section §4.1.1.1.5 for more details). In other words, students in the three different groups actually reported that they somehow experienced an increase in their confidence over the course of the semester. This confidence ranges from the confidence to speak publicly to the confidence to write and use computers.

To sum up, several themes that occured only in the online and hybrid groups include gaining computer literacy, opportunity for self-testing, flexibility/ accessibility, socialisation/making friends, and easy access to course materials. Another theme – enabling reluctant students to participate/equal participation occurs only in the online and face-to-face modes. However, there are also themes that are distinctive to a particular format.

4.1.4.1.3 Themes Distinctive to a Particular Section

Certain themes concerning the benefit of each of the three different modes of instruction are only reported by students in a particular group. These themes include the following: no face-to-face meeting is required (frequency: 4) and absence of noise (frequency: 1), reported by the online group; course satisfaction (frequency: 5) and time efficiency (frequency: 1), reported by the hybrid group; teacher immediacy (frequency: 58), classroom community (frequency: 9), access to direct explanation from the teacher (frequency: 5), and preference for face-to-face (frequency: 1), all reported by the face-to-face group.

What is interesting here is the noticeably high frequency of reporting on teacher immediacy as the benefit of face-to-face classroom instruction reported by the students in this group. In fact, teacher immediacy constitutes the most frequently reported benefit of in-class tuition. In other words, most of the positive learning experiences reported by students attending in-class tuition are related to the instructor's characteristics (teacher looks relaxed, uses humour/jokes, speaks slowly and clearly, is open, friendly, and sociable, employs effective teaching technique, applies multiple instructional methods, treats students equally, etc.), rather than to their own actual learning experience (communicating with native speakers, classmates and the teacher, seeks help from friends, etc.), which is the case with the reports of the students attending online or hybrid tuition.

For in-class students, it appears that the teacher is viewed as playing a central role in their learning. In fact, the overwhelming majority of the in-class students reported that it is the teacher's characteristics and teaching technique (both of which constitute perceived teacher immediacy) that are responsible for their learning (further discussion of this issue can be found in section § 4.1.3.1.1). Therefore, it is not surprising that, for in-class students, it is the teacher's characteristics, rather their own learning experience in the classroom, that significantly impact on their evaluation of the class they attended. In this situation, success or failure could easily be attributed to the teacher alone (i.e., I managed to get an A for this unit because the teacher was great; I failed the unit because the teacher was hopeless, etc.), rather than to themselves (I managed to get an A for

this unit because I studied really hard this semester; I failed the unit because I did not read the handout, etc.).

However, this report concerning the teacher's positive characteristics appears to be less obvious in the online format. For online students, it is their learning experience and their evaluation of that learning experience, rather than the teacher's characteristics, that become the major focus of their report[51]. This may suggest that students' reliance on the teacher for their learning appears to be minimal in the online learning environment compared to that in face-to-face instruction where the teacher is viewed as having a central role in student learning. Of course, it is not sensible to blindly suggest that the teacher does not play any role at all in an online learning environment. Rather, it is argued that, unlike in-class students, online students do not seem to particularly attribute their positive learning experience to the teacher. The fact that online students are inclined to seek help and support from their classmates for their learning (see section § 4.1.1.1.3 for further details and some samples of students' testimony) rather than from the teacher, which is also evidenced from the threaded discussion in the forum, may be amongst the reasons why online students do not make as many comments as in-class students do about the perceived positive characteristics of the teacher.

Another frequently reported theme by students attending in-class tuition is that of the establishment of a classroom community. In particular, these students reported that they helped, supported, and cared about one another in their learning – characteristics which typify a classroom community (McMillan 1996; McMillan & Chavis 1986; Rovai 2002d; Vesely 2007). However, online and hybrid students also reported a similar theme, either explicitly or implicitly, but this theme is discussed under the interactivity section (see section § 4.1.1.1.3 and § 4.1.2.1.4 for further details). In other words, the three groups appear to have experienced a sense of classroom community. Needless to say, this perceived sense of classroom community is primarily attributed to the dynamic interaction that the students had

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[51] In fact, online students did not make any judgement at all concerning teaching technique or the teacher's characteristics as is the case with the report of in-class students. As far as the teacher is concerned, the only concern voiced by online students is related to the lack of the teacher's supervision/monitoring in such a learning environment.

over the course of the semester. This is especially true for online students where face-to-face communication is denied them, but whose responses signify the existence of the perceived sense of classroom community among the students. Put simply, regardless of the mode of instruction, students' perceived sense of classroom community is primarily a direct result of their dynamic interactions over the course of the semester.

The perceived advantages of each of the three different learning environments discussed above are summarised in the following table providing thefrequency of each theme across the three different groups:

Table 4. Perceived advantages of three different modes of delivery

Themes	Frequency		
	Online	Face-to-Face	Hybrid
Fun/Interesting Learning Experience	29	41	29
Gaining Computer Literacy	19	-	23
Interactivity	16	3	5
Opportunity for Self-Testing	9	-	1
Quality Learning	7	30	8
Enable shy and reluctant students to participate/Equal Participation	6	1	-
Flexibility/Accessibility	5	-	3
No face-to-face meeting required	4	-	-
Socialisation (Making Friends)	3	-	3
Easy Access to Course Materials	2	-	3
Absence of Noise	1	-	-
Course Satisfaction	-	-	5
Time Efficiency	-	-	1
Gain Self-Confidence	-	4	1
Teacher Immediacy	-	58	-
Classroom Community	-	9	-
Access to Direct Explanation from the Teacher	-	5	-
Preference for (Superiority of) face to face	-	1	-

For the shake of the discussion, I have distinguished between "quality learning" and "course satisfaction". The former refers to students' comments of their learning experience, whereas the latter refers to their evaluation of the unit, that is, how happy they are with the unit. Similarly, I have also differentiated between "socialisation (making friends)" and "classroom community". The former refers to students' relationship with their friends, whereas the latter refers to the relationship among the students, including the teacher, in the class (not necessarily friends).

Overall, although the three groups differ in several themes, they were similar in terms of promoting an interesting learning experience, quality learning and interaction. However, there are also reported drawbacks of each of the above formats, which will be discussed immediately below.

4.1.4.2 Reported Drawbacks of Each of the three Formats

Unlike the reported advantages discussed above, no similar drawbacks occurred across the three different formats. Two different drawbacks are shared by students in both online and hybrid groups. The first drawback concerns technical problems (online: 6, hybrid: 4) and the second concerns a lack of computer literacy (online: 6, hybrid: 1). Students in the online section reported more drawbacks than did the other two groups, and students in the face-to-face format reported the least shortcomings.

As mentioned earlier, the overall drawbacks reported by online students, from the most to the least frequently mentioned, are: (a) absence of face-to-face (frequency: 13), (b) technical problems (frequency: 6), (c) lack of computer literacy (frequency: 6), (d) lack of teacher's monitoring and/or supervision (frequency: 5), decrease in participation overtime (frequency: 4), (e) lack of immediate response and/or feedback (frequency: 3), (f) inadequate facilities/difficult access to computer (frequency: 2), (g) difficult to tell whether an online person is 'real' (frequency: 2), and (h) potential for non-participation (frequency: 1) (see section § 4.1.1.2 for further details and discussion). In comparison, students in the hybrid section identified four areas associated with the drawback of hybrid instruction. These include, from the most to the least

frequently mentioned, (a) technical problems (frequency: 6), (b) preference for pure face-to-face instructions (frequency: 2), (c) lack of computer literacy (frequency: 1), and (d) decreased social relations (frequency: 1) (see section § 4.1.2.2 for further details and discussion). Finally, students in the face-to-face class reported only one problem which is related to workload (frequency: 2). In particular, these students complained that there was too much content covered in each meeting and implied that they could not cope with the pace of the instruction (see section § 4.1.3.2 for further details and discussion).

Thus, whereas online students also reported having experienced interactivity and quality learning, and even regarded their learning experience as an interesting one, there appear to be more challenges in this format compared to the other two formats (face-to-face and hybrid). Two classical problems – technical problems and a lack of computer literacy – must be seriously considered when implementing online learning. Indeed, as previous studies have suggested, one of the major factors contributing to students' dissatisfaction with online learning is that of technical problems (Ali, Hodson-Carlton & Ryan 2004; Felix 2001; Keller & Gernerud 2002; Ku & Lohr 2003; Montelpare & Williams 2000; Ward & Newlands 1998). Similarly, students' lack of computer literacy should also be given serious consideration prior to the implementation of online learning programs. Needless to say, to be able to properly function in an online learning environment, students must be computer literate in the first place. It has been suggested that one of the common problems for the implementation of online learning is that students have different levels of computer literacy (Lee 2004; Montelpare & Williams 2000; Summers, Waigandt & Whittaker 2005). Therefore, ensuring that students possess the minimum required skills prior to them taking online learning programs is of immense importance.

Disadvantages of each of the three different learning environments discussed above are summarised in the following table:

Table 5. Perceived disadvantages of three different modes of delivery

Themes	Frequency		
	Online	Face-to-Face	Hybrid
Absence of Face-to-Face	13	-	-
Technical Problems	6	-	4
Lack of computer literacy	6	-	1
Lack of Teacher's Monitoring/Supervision	5	-	-
Decreased Participation Overtime	4	-	-
Lack of Immediate Response/Feedback	3	-	-
Inadequate Facilities/Difficult Access to Computer	2	-	-
Difficult to tell whether an online person is 'real'	2	-	-
Potential for non-participation	1	-	-
Preference for Pure Face-to-Face Instructions	-	-	2
Decreased Social Relations	-	-	1
Workload	-	2	-

As can be seen from the above table, of the three different groups, the online section has the most reported drawbacks, followed by the hybrid and face-to-face modes. The absence of face-to-face contact is the most frequently reported drawback of online learning. This, in turn, suggests that although online students could have dynamic interactions by means of synchronous and asynchronous communication, some students hold to the belief that face-to-face meeting is still important for their learning. Obviously, as discussed previously, students' personal characteristics (Rovai 2004), including, but not limited to, learning styles (e.g. Sauers & Walker 2004) and mode preference, as well as belief in technology, would affect their perception of the importance of face-to-face communication in their learning.

4.1.4.3 Conclusion for Research Question #4

Examining students' responses concerning the perceived benefits and drawbacks of each of the three different modes of instruction under investigation (online, face-to-face and hybrid), some conclusions can be made.

First of all, as far as the perceived benefits are concerned, three themes occurred across the three different groups: (a) fun/interesting learning experience, (b) interactivity, and (c) quality learning. The following benefits, however, are reported only by online and hybrid groups, relating to the gaining of computer literacy, opportunity for self-testing, flexibility/accessibility, socialisation/making friends, and easy access to course materials. Finally, there are also benefits that are distinctive to a particular group, including the absence of face-to-face contact and noise, reported by online students; course satisfaction and time efficiency, reported by hybrid students; teacher immediacy, classroom community, access to direct explanation from the teacher, and preference for face-to-face contact, all reported by the face-to-face group.

Secondly, as far as the perceived drawbacks are concerned, no similar themes are shared across the three groups. The online group reported the greatest range of drawbacks, followed by the hybrid and face-to-face groups respectively. The absence of face-to-face communication is the most frequently reported drawback of online learning. Technical problems and lack of computer literacy are two drawbacks reported by both online and hybrid groups. Overall, students' responses suggest that, whilst online learning appears to be a viable mode of instruction, there are more challenges in this mode of delivery than in the hybrid and face-to-face formats. However, as computer literacy and access to internet becomes more widespred in both the campuses and the community, students' perceptions of online delivery may become even more positive.

4.2 Findings from Quantitative Data

Having presented, analysed, and discussed students' reflections on their personal experience with one of the three different modes of instruction over the course of the semester, it is also vital that we examine their learning outcomes as a result of attending one particular mode. Learning outcomes have always been used as one

of the indicators of the effectiveness of any teaching activity. Whilst students may enjoy their learning experience in a given mode, they may not necessarily perform well in such learning environments. By examining both students' perceptions and their learning outcomes, we might better understand the viability of each of the the three different modes of instruction examined in the present study. At the very practical level, this information will help us to make an informed decision regarding the integration of technology into our educational system, either as a pure online or a hybrid program.

4.2.1 Research Question #5: How effective are Web-based compared to traditional face-to-face instructions in the teaching of English Grammar in the EFL context?

a. Do students' grammar test scores change as a result of attending one of the three different modes of instructions – Web-based, traditional face-to-face, and hybrid instructions – over the course of the semester? If so, how do they change?

b. How does mode of instruction (group) affect students' grammar test scores?

To answer this question, students' learning outcomes, as indicated by their pre- and post-test scores, are compared. This involves both within- and between- group comparisons. A within-group comparison (i.e. pre-test group 1 ↔ post-test group 1, pre-test group 2 ↔ post-test group 2, pre-test group 3↔ post-test group 3) is important so that each group's performance prior to and after attending a given mode of instruction over the course of the semester can be compared. By the same token, a between-groups comparison on post-test scores, holding pre-test scores constant, is necessary to examine the effect of mode of instruction (group) on students' grammar test scores.

4.2.1.1 Within Group Comparison for Group 1 (Pre-test 1 ↔ Post-test 1)
A statistical analysis of paired samples t-test was conducted to test whether or not pre-test scores are significantly different from post-test scores for group one.

Since t-test belongs to parametric statistics, however, it is vital that the assumption of t-test (parametric statistics) be examined first. It was found that none of these assumptions has been violated (see Appendix 2) which, in turn, warrants the application of this analysis.

The result of the paired samples t-test suggests that significant differences exist in students' pre- and post-test scores, t (49) = -9.870, p (.001) < .05, in that, post-test scores (M = 69.65, SD = 14.36) are significantly higher than pre-test scores (M = 53.48, SD = 14.30) – a significant gain of 16.17 points (see Appendix 5). The effect size is 0.82, which is considered to be a large effect size (Cohen 1988). Thus, it may be said that, over time, Web-based instruction has resulted in a significant increase in students' grammar test scores.

4.2.1.2 Within Group Comparison for Group 2 (Pre-test 2 ↔ Post-test 2)

A statistical analysis of paired samples t-test was conducted to test whether or not pre-test scores are significantly different from post-test scores for group two. Examination of t-test assumptions indicates that none of the assumptions has been violated (see Appendix 3).

The result of the paired samples t-test suggests that significant differences exist in students' pre- and post-test scores, t (46) = -15.209, p (.001) < .05, in that, post-test scores (M = 69.50, SD = 11.89) are significantly higher than pre-test scores (M = 48.46, SD = 14.12) – a significant gain of 21.04 points (see Appendix 6). The effect size is 0.91, which is considered to be a large effect size (Cohen 1988). Thus, it may be said that, over time, hybrid instruction has also resulted in a significant increase in students' grammar test scores.

4.2.1.3 Within Group Comparison for Group 3 (Pre-test 3 ↔ Post-test 3)

A statistical analysis of paired samples t-test was conducted to test whether or not pre-test scores are significantly different from post-test scores for group three. Examination of t-test assumptions indicates that none of the assumptions has been violated (see Appendix 4).

The result of the paired samples t-test suggests that significant differences exist in students' pre- and post-test scores, t (54) = –11.458, p (.001) < .05, in that,

post-test scores (M = 73.11, SD = 10.04) are significantly higher than pre-test scores (M = 56.22, SD = 11.70) – a significant gain of 16.89 points (see Appendix 7). The effect size is 0.84, which is considered to be a large effect size (Cohen 1988). Thus, it may be said that, over time, traditional face-to-face instruction has also resulted in a significant increase in students' grammar test scores.

In short, when comparing the pre- and post-test scores of the three groups (pre-test 1 ↔ post-test 1, pre-test 2 ↔ post-test 2, pre-test 3 ↔ post-test 3), all groups, regardless of mode of instruction, appear to have made a significant increase in their post-test mean scores, a finding consistent with that of the previous study reporting improvement in students' writing skills regardless of modes of instructions (Mehlenbacher *et al.* 2000). As shown earlier, group two has experienced the highest increase in test mean scores (21.04 points), followed by group three (16.89 points) and group one (16.17 points) respectively[52]. The effect size for the three groups is all large according to Cohen's criteria.

However, these data can also be interpreted in a number of ways. For example, the fact that all groups experienced an increase in their post-test scores may not necessarily be attributed to the effect of treatment (i.e. the three different modes of instruction); rather, it may be due to maturation (Hatch & Lazaraton 1991). Put differently, an increase in students' post-test scores may simply be attributed to the fact that they have learned course materials in the first place, regardless of mode of instruction. This is particularly true since participants in the present study were not randomised and, as a result, it is difficult to control for confounding variables which may interfere with their performance. By the same token, students' effort in learning course materials may also be responsible for an increase in their post-test scores. Thus, whereas a significant increase in students' post-test scores is observed, it is entirely possible that this increase may be attributed to factors other than mode of instruction alone.

A visual comparison of the pre- and post-test scores across the three groups can be shown in the following line graph.

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[52] Interestingly, group two also has the lowest mean scores in the pre-test (48.46), compared to group one (53.48) and group three (56.22).

Figure 5. Pre- and Post-test Scores across the three groups
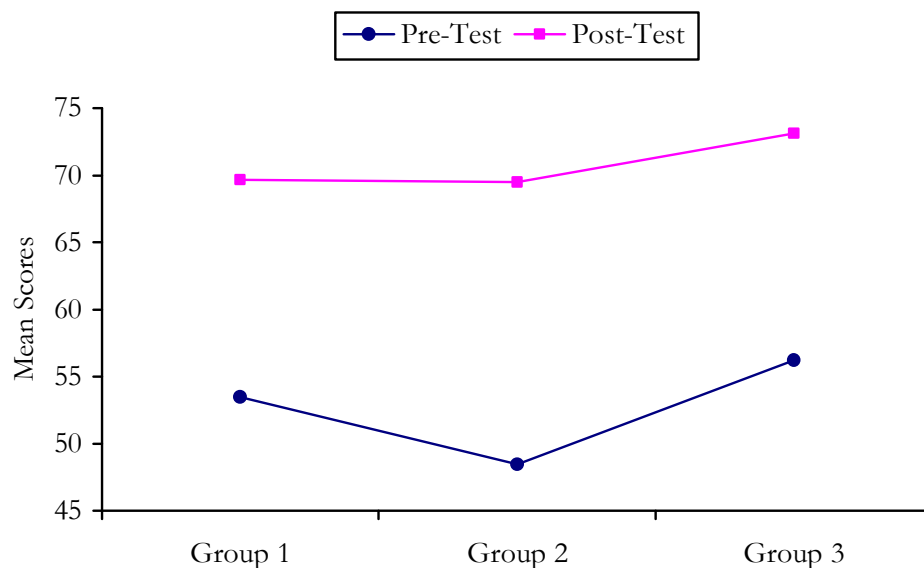
As can be seen from the above graph, whereas it is clear that all groups have experienced an increase in the post-test means scores, the overall performance of group 1 relative to group 2 and 3, group 2 relative to group 1 and 3, and group 3 relative to group 1 and 2 remains unclear[53]. Therefore, a between-groups comparison is conducted so that the performance of a given group relative to the performance of the others can be observed.

4.2.1.4 A Post-Test Comparison with Pre-Test Scores as the Covariate

A one-way between-groups analysis of covariance (ANCOVA) was conducted to compare the effects of the three different modes of instructions (group) on students' post-test grammar scores. In this analysis, students' post-test scores were used as the dependent variable and the group as the independent variable or factor, whereas the pre-test scores were used as the covariate. By using the pre-test scores as the covariate, possible pre-existing differences in the pre-test scores can be

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[53] Although the graph provides a visual comparison of the performance of the three groups in both tests, this cannot be used as a reliable measure for drawing a conclusion regarding the performance of these groups.

controlled and, therefore, the effect of group (modes of instructions) on post-test scores can be clearly demonstrated (Tabachnick & Fidell 1989).

Prior to conducting the analysis, however, a number of ANCOVA assumptions were checked to ensure that these assumptions have not been violated. This includes the assumption of normal distribution, linearity, homogeneity of variance, homogeneity of regression slopes and the significance of the covariate (Field 2005). It was found that none of these assumptions has been violated (see Appendix 8-12) which, in turn, warrants its application.

The result of the one-way analysis of covariance indicates that the performance of the three groups in the post-test, after adjusting for pre-existing differences in the pre-test, is not significantly different from one another, F $(2,148) = 1.16$, p (.318) > .05 (adjusted post-test for group one $M = 69.31$, group two $M = 72.13$ and group three $M = 71.12$. The main effect of group, as indicated by a partial eta squared (η^2) value, equals 0.015, which is considered to be a small[54] effect size (Cohen 1988). Furthermore, there was a fairly strong relationship between the covariate (pre-test scores) and the independent variable (post-test scores). The value of the partial eta squared for this relationship equals .423. In other words, the covariate (pre-test) accounts for 42.3 per cent of the total variance in the post-test.

Whereas the results of the ANCOVA suggest that the three groups do not differ from each other with respect to the post-test results, it is worth re-stating that students attending hybrid instruction achieved the highest gain scores compared to the other two groups. This finding corroborates that of Gutierrez and Russo (2004) in which case hybrid students were reported to achieve the highest gain scores, followed by face-to-face and online students respectively. It also confirms that of Unal (2005) where he reported that in terms of learning outcomes and course satisfaction, Web-based instruction is comparable to face-to-face modes of instruction. The result of the present study also partially confirms the

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[54] When within-group comparisons are conducted (pre-test vs. post test), the effect size is large for all groups. When between-group comparisons are conducted on the post-test with pre-test scores as the covariate, however, the effect size becomes relatively small. This is because, since all groups have made an equally significant improvement in the post-test, the difference between this significant improvement (post-test scores) becomes less significant.

study conducted by McEwen (2001) when she reported "that Web-assisted instruction, the blending of online and traditional instruction, offers a richer learning environment than either one offered alone" (p. 103). A comparison of the test scores across the three groups is presented in the following table:

Table 6. Mean scores for the pre- and post-test of the three groups

Group	Pre-Test	Post-Test	Gain (in points)	Effect size (η^2)
1	53.48	69.65	16.17	0.82
2	48.46	69.50	21.04	0.91
3	56.22	73.11	16.89	0.84

4.2.1.5 Conclusion for Research Question #5

Two major conclusions can be drawn from this study. Firstly, the post-test mean scores of all groups are significantly higher than their corresponding pre-test. This suggests that, over the course of the semester, all groups, regardless of mode of delivery, have made significant improvement in their grammar test scores. Secondly, in terms of gain scores, the hybrid group experienced the highest increase (21.04 points), followed by the face-to-face group (16.89 points), and the online group (16.17 points) respectively. A one-way between-groups analysis of covariance (ANCOVA) on the post-test scores with pre-test scores as the covariate, however, indicates that post-test mean scores of the three groups are not significantly different from one another, $F (2,148) = 1.16$, $p (.318) > .05$. Adjusted post-test means scores (i.e. post-test means scores after removing the effect of the pre-test scores) are as follows: group one ($M = 69.31$), group two ($M = 72.13$), and group three ($M = 71.16$) respectively. It can, therefore, be concluded that in terms of students' learning outcomes, as indicated by test scores, Web-based instruction appear to be as effective as traditional face-to-face and hybrid instruction.

4.3 Chapter Summary

This chapter presented and analysed findings of the present study, comprising findings from qualitative data (students' learning experiences) and findings from quantitative data (their learning outcomes).

As far as students' learning experiences are concerned, reported advantages of online delivery (frequency 101) outnumbered the disadvantages (frequency 42). Thematically grouped, and listed from the most to the least frequently mentioned, the advantages of online delivery were (a) fun/interesting learning experience, (b) gaining computer literacy, (c) interactivity, (d) opportunity for self-testing, (e) quality learning, (f) to enable shy and reluctant students to participate, (g) flexibility, (h) no face-to-face meeting required, (i) socialisation (making friends), (j) easy access to course materials, and (k) absence of noise. As for the disadvantages, listed once again from the most to the least frequently mentioned, these were (a) absence of face-to-face contact, (b) technical problems, (c) lack of computer literacy, (d) lack of teacher's monitoring or supervision, (e) decreased participation overtime, (f) lack of immediate feedback or responses, (g) inadequate facilities (difficult access to computer), (h) difficult to tell whether the person on the Net is real, and (i) potential for non-participation.

As for a hybrid method, reported benefits (frequency 82) far outnumbered their corresponding drawbacks (frequency 8). Listed from the most to the least frequently mentioned, the advantages of hybrid learning were (a) fun/interesting/ learning experience, (b) gaining computer/internet literacy, (c) quality learning, (d) interactivity, (e) course satisfaction, (f) flexibility, (g) socialisation (making friends), (h) easy access to course materials, (i) self-testing, and (j) self-confidence gain. As for the disadvantages, these included (a) technical problems, (b) preference for pure face-to-face, (c) lack of computer literacy, and (d) decreased social relations.

Finally, reported advantages of face-to-face tuition (frequency: 152) also far outnumbered the disadvantages (frequency: 2). Listed from the most to the least frequently mentioned, the advantages of face-to-face teaching were (a) teacher immediacy, (b) interesting/enjoyable learning experience, (c) quality learning, (d) classroom community, (e) access to direct explanation from the

teacher, (f) gain self-confidence to speak English, (g) interactivity, (h) preference for face-to-face, and (i) equal participation. Only two disadvantages related to workload were reported by students attending classroom tuition.

As far as students' learning outcomes are concerned, the post-test scores for all three groups were significantly higher than their corresponding pre-test scores p (.001) < .05. The hybrid group achieved the highest gain score (21.04 points), followed by face-to-face group (16.89 points) and the online group (16.17 points). However, results of the analysis of covariance, holding the pre-test scores constant, suggested that no significant difference exists in students' post-test scores across the three groups F (2,148) = 1.16, p (.318) > .05. Adjusted post-test means scores for group one M = 69.31, group two M = 72.13 and group three M = 71.12. The main effect of group, as indicated by the partial eta squared, equals .015. Overall, all groups performed equally well in the post-test after controlling for pre-existing differences in the pre-test.

CHAPTER 5

DISCUSSION AND IMPLICATIONS

The present study clearly suggests that both hybrid and online formats are viable modes of delivery as evident from students' responses to their learning experience over the course of the semester, as well as from their test scores. In terms of students' responses, more positive than negative learning experiences were reported by students across the three groups. This suggests that all groups were generally positive about their learning experience. However, as already noted earlier, the online group reported more negative experiences than the other groups. In terms of students' test scores, it was found that, after keeping pre-existing differences in students' pre-test scores constant, there was an insignificant difference in students' post-test scores. This leads to the conclusion that students' learning and learning experiences across the three different formats are relatively comparable, although an online mode of delivery proves to be more challenging than both face-to-face and hybrid formats.

A number of issues emerged from these findings. These include (a) the role of instructional design and social interaction in engendering students' positive learning experience regardless of mode of instruction, (b) social interaction and sense of community, (c) quality learning across the three different modes of delivery, (d) the unique advantage of online environments, (e) the value of online quizzes, (f) the flexibility of online learning and teacher immediacy (g) self-regulation and learning styles, (h) a decrease in participation and the phenomenon of 'lurking', (i) hybrid – "the best of both worlds", and (j) critical success factors in online learning.

5.1 The Role of Instructional Design and Social Interaction

That students in the three groups reported having experienced fun/interesting learning experiences suggests that the three different learning environments all have the potential to offer them an interesting and motivating learning experience. It appears that it may not be the mode of delivery alone that makes teaching

attractive or unattractive, but what the students actually do (activities) or experience, and how such activities are designed (pedagogy) that seems to be critical[55]. In the present study, students across the three groups were strongly encouraged to interact with one another in their learning, as reflected in the unit design, rather than passively receive knowledge from the teacher. This pedagogy is in line with the major tenet of constructivism learning theory, which places a strong emphasis on the importance of social interaction in learning.

Since students across the three groups were strongly encouraged to discuss and share ideas with one another, including with the teacher, and since the communication media supports this interactivity, it is not surprising that they also reported having experienced dynamic interaction over the course of the semester. This finding is important since research has shown that interaction serves as the key factor in successful learning (Kafai & Resnick 1996) regardless of mode of delivery (Swan 2002). In particular, the constructivist learning theory posits that social interaction promotes learning and that students learn by interacting with one another. Through social interaction, for example, students challenge each other's beliefs, raise questions, offer new insights to the problem, etc., which, in turn, enables them to construct their own understanding of a phenomenon. In online learning environments, this process can be clearly observed through the use of forums or bulletin boards where students are exposed to different perspectives and opinions and construct their own understanding based on these perspectives and their prior knowledge (Martyn 2003). Similarly, in a face-to-face classroom, knowledge construction occurs through group discussion and sharing ideas among students, and between students and the teacher.

Instructional design should, therefore, encourage students to interact with one another, regardless of mode of delivery, since the present study clearly suggests that the students highly value this experience of interactivity in their learning. This is especially true with online learning environments.

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[55] And also the quality of their interaction with the teacher and with peers

5.2 Social Interaction and Sense of Community

Students' frequent interaction with both classmates and the teacher not only affects their learning in terms of constructing knowledge, but also their perceived sense of community. Haythornthwaite *et al.* (2000) find that students who do not interact with their classmates feel more isolated than those who do interact. Greater interaction correlates positively with greater perceived learning (Swan 2002). Dawson (2006) observes that frequent online communication leads to a stronger sense of community and to a greater satisfaction with the unit. Rovai (2002d) reports that students who perceive a strong sense of community register greater cognitive learning, express greater satisfaction with their course, feel less isolated, and are more motivated in their learning. In comparison, those who either do not perceive a sense of community, or perceive a low sense of community, are predisposed to having a negative learning experience. The importance of a sense of community is relevant for both traditional face-to-face classrooms and online courses (Rovai and Baker 2005).

Students' interaction with their teacher also affects their perceptions of learning, in that students who believe that they have more interaction with the teacher are predisposed to believe that they have learnt more than those who believe that they have less interaction (Jiang & Ting 2000). In other words, interaction is a pre-requisite for building a strong sense of community among the students and is, therefore, crucial to engendering a positive learning experience.

That students across the three groups reported having experienced dynamic interaction over the course of the semester, as mentioned earlier, suggests that the three different modes have the potential to promote and support interactivity – an important aspect of learning and a pre-requisite for a sense of classroom community. Interestingly, this positive learning experience was most frequently reported by online students, despite the fact that these students were separated by distance and did not even experience face-to-face interaction in their learning over the course of the semester (except for tests and orientations). On the face of it, this finding seems a little strange. However, the fact that, unlike face-to-face interaction, online interaction is not constrained by time and space, as

mentioned earlier, may explain why online students appear to be more deeply impressed with their experience of online interaction.

The finding of the present study appears to challenge the widely-held belief that online students are prone to experiencing a sense of alienation and isolation due to the physical distance from peers and the teacher (Morgan & Tam 1999). Also, this finding appears to negate such claims that online interaction is limited due to the nature of the media (Wang & Newlin 2002). On the contrary, it clearly suggests that students reported to experience dynamic interaction using both synchronous and asynchronous communication. What is more, some of them explicitly mentioned the superiority of online over conventional face-to-face classroom interaction. This finding seems to support the claim that online interaction "would allow levels of interaction not possible in traditional classrooms" (Athern & Repman 1994 p. 544). Perhaps it is also for this reason that participants in both hybrid and online groups also reported the experience of socialising with others. Of course, during online sessions, there are always students who are motivated to contribute and participate actively in the discussion and sharing of ideas with others, but there are also those who just do not want to be involved for various reasons. Generally, it is these passive learners who are most likely to experience a sense of alienation and isolation.

Thus, again, I would suggest that it may not be so much the communication media (the Internet or face-to-face) that bring about this experience of alienation that is widely cited in the literature; rather, it is one's lack of involvement in the interaction with other group members that engenders this feeling. In fact, even in a face-to-face classroom, students may also experience a sense of alienation (Picciano 2002). Therefore, contending that the experience of isolation is a particular attribute of the online learning environment only questionable. Nonetheless, it is true that a sense of alienation may be more severely perceived in an online learning environment than in a face-to-face classroom, primarily due to the distance from classmates and the teacher, as mentioned above. However, again, physical distance alone does not appear to be the main factor contributing to this feeling of estrangement, as commonly posited in the literature.

In view of the above, again, social interaction plays a crucial role in promoting a positive learning experience and in combating a feeling of isolation among students, regardless of mode of instruction. Social interaction among the students is critical because students who lack interaction with classmates and the teacher are inclined to experience a weak sense of community and would, in turn, feel disconnected and estranged from the rest of the class (Rovai 2002b; Rovai & Wighting 2005) – an experience that could be detrimental to the learning experience and learning itself. Bennet (as cited in Thurston 2005) contends that students who do not feel connected to other students in the same class are predisposed to experience feeling "insecure, jealous, isolated and insulted" (p. 355). However, this feeling of connectedness can only be experienced if students interact with one another in the first place.

Thus, promoting interaction and collaboration among the students is crucial in any classroom, irrelevant of mode of delivery; however, it is especially important in an online learning environment where distrust and suspicion among students could develop quite easily. This is primarily due to the absence of face-to-face contact and non-verbal cues critical for effective communication. In fact, some of the participants in the present study expressed their concern about the fact that, in an online learning environment, it is very difficult to tell whether an online person is real. Online teachers should be well aware of this phenomenon and effort should, accordingly, be made to address this issue. For example, getting students to share their personal stories in a small group, particularly at the very beginning of the semester, could promote not only interaction among students, but also trust. Once the students have developed trust in one another, they would be more likely to participate, collaborate, and help each other in their learning, paving the way for the experience of quality learning.

5.3 Quality Learning across the three Different Modes of Delivery
Students across the three groups also reported that they had experienced quality learning over the course of the semester. However, face-to-face students more frequently reported this positive learning experience than did hybrid and online students. This is not particularly surprising given the fact that face-to-face

teaching methods have always been their comfort zone over the past years. Also, some students may still hold the belief that quality learning is more likely to be achieved in a conventional face-to-face classroom as reflected by their comments. In comparison, online and hybrid formats are quite a new learning experience for these students. Although they find this new experience interesting and rewarding, some students clearly indicate that they would prefer conventional, face-to-face classroom instruction in terms of understanding and absorbing course materials.

Whereas students attending face-to-face instruction reported having experienced quality learning more frequently than those attending the other formats, it was clear that students in hybrid and online sections also shared this experience to a large extent as evident from their comments. This is particularly interesting, bearing in mind that this was the first time that these two learning environments were introduced to these students; yet, their comments about the quality of learning offered by these new learning environments were very encouraging. Obviously, were some, if not all, of the problems reported by these students concerning their experience with these delivery modes to be properly addressed, the students' learning experience may become even more positive, which should, in turn, translate into better acceptability of the system.

The responses of the students across the three groups concerning the quality learning they experienced were further corroborated by their test scores. As discussed earlier, all groups experienced a significant increase in their post-test scores relative to their pre-test scores and the difference in post-test scores for all groups, after keeping pre-existing differences in the pre-test constant, was insignificant. This clearly suggests that all groups had learned course materials equally well. Thus, both students' comments and their tests scores appear to suggest that students across the three groups had, indeed, experienced quality learning as discussed above. Interestingly, in terms of students' perception of their learning experience, as mentioned previously, the face-to-face group was more positive than the other groups, in which case the frequency of the positive learning experience reported by students in this group was higher than that in the other groups, while the frequency of the negative learning experience was very low. In terms of gain scores, however, as indicated by an increase in students' post-test

scores relative to their pre-test scores, the hybrid group outperformed the others, although the difference was statistically insignificant.

Furthermore, whereas all groups reported having experienced quality learning, online students reported a more negative learning experience than students in the other groups. This finding does not come as a surprise. Obviously, the absence of face-to-face contact with the teacher and classmates (made worse by occasional technical problems encountered while accessing the Web, slow internet connection, and the lack of computer literacy, for example), it would be expected that pure online learning is more challenging than the other formats. Moreover, being a completely new learning experience, many students have to learn to develop new learning strategies to cope with learning in these new environments. Unfortunately, this is not an easy task for many students. Whereas some students are able to make a quick adjustment to their learning strategies, others might require more time to do so. Therefore, it is not unexpected that online students reported more challenges compared to the other groups. The results of the present study support findings of previous studies (e.g. Terry & Lewer 2003) comparing the effectiveness of the three different modes of instruction for teaching International Economics, in which case the author reported that, of the three formats, face-to-face received the most favourable ratings, followed by hybrid and online formats.

In the present study, however, online students also reported a unique positive learning experience not stated elsewhere.

5.4 The Unique Advantage of Online Environments

Some online students testified that they felt more comfortable participating in an online discussion than in a face-to-face discussion and that online learning environments are less intimidating. Students' participation itself can be in the form of "offering their ideas and thoughts spontaneously, volunteering to answer questions, answering questions when called on..." (Turner & Patrick 2004, p. 1760). Additionally, it was also noted that classmates who were normally reluctant and disinclined to participate in a face-to-face discussion were, in fact, willing to contribute in an online discussion. Thus, the findings of the present

study appear to suggest that online learning environments are particularly beneficial for shy and reluctant students who may, otherwise, refrain from participating in or contributing to face-to-face discussion and sharing ideas with others.

In online environments, social context cues that are associated with power or dominance in face-to-face interactions, such as voice tone, body language, hierarchy, etc., are missing, or at least reduced. It has been argued that the absence of these cues could enhance the social equity of virtual community (Rovai 2000), thus promoting interaction and increasing a sense of community. In other words, online interaction is less intimidating than face-to-face interaction because most of the constraints to face-to-face interaction as mentioned above are absent in online environments. Due to the absence of these constraints, students are more likely to interact with one another, which should translate to increased participation.

Since online environments appear to promote student participation, the implications for teaching and learning become immediately apparent. Research studies have shown that participation in class activities assists learning (Turner & Patrick 2004). In other words, students who are actively engaged in class activities are more likely to learn than those who are not. This is because participation:

> provides students with opportunities to learn and practice new knowledge and strategies, to explain their reasoning, and to examine their thinking processes and recognize the need to revise thinking. It also allows teachers a window into student thinking processes and learning, allows them to diagnose learning problems or evaluate student progress, and provides teachers an opportunity to scaffold, or provide cognitive and affective supports, for students' understanding (Turner & Patrick 2004 p. 1760).

In other words, promoting student participation is crucial because, by engaging in class activities, students have the opportunities to construct their understanding of a phenomenon through their interaction with classmates and teachers, and to receive scaffolding, either from peers or from teachers. Therefore, promoting student active participation should become the goal of any classroom, regardless of mode of instruction, simply because participation in class activities facilitates

knowledge construction. Unfortunately, for some students, participation in a face-to-face classroom is not an easy task and, in some cases, could be a daunting experience as is evident from students' comments reported earlier.

There are various reasons why students are reluctant to participate or express their opinions in a face-to-face classroom. Previous studies, particularly those conducted into language classrooms (e.g. Morita 2004) suggest that being afraid[56] of making mistakes, which often invites negative judgement from teachers and classmates, prevents students from participating in or contributing to a face-to-face discussion. The present study, however, suggests that, apparently, it is not so much about making mistakes itself that is detrimental to student participation, but rather it is more about 'being watched face-to-face' by others when making such mistakes that matters most. In fact, as evident from their comments, some online students feel more comfortable engaging in online discussion simply because nobody is watching them 'live' in case 'silly things' happen. Indeed, this finding is important given the fact that one of the challenges facing conventional face-to-face classroom instruction methods at this University (where this study was conducted) is that students are generally reluctant to engage in class discussions for the reasons mentioned above.

Additionally, because students do not want to take risks, which usually results in so-called 'losing face', participation in a face-to-face classroom becomes more intimidating and stressful for some students, and these students want to stay safe by keeping quiet most, if not all, of the time. This way, they are safe from the possibility of losing face. In this case, only those who are highly confident and have a sound understanding of the topic for discussion would normally voice their opinions which, very often, results in the domination of the discussion by certain individuals. This, in turn, becomes even more intimidating for students who lack the self confidence or who have not mastered the topic.

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[56] As mentioned previously, this phenomenon is perhaps more common in Asian classrooms (see Soo & Ngeow 1998). That students are reluctant to participate during exchanges of ideas with others in the classroom may be related to how teachers respond or react to students' mistakes. In most of these cultures, normally there are only two possibilities to students' responses, either correct or incorrect.

In online learning environments, however, students appear to be more relaxed and willing to participate, primarily due to the physical absence of others and the nature of the communication media, which allows students to contribute simultaneously without the need for taking turns. In other words, online learning environments have an 'equalising effect' (Jepson 2005), meaning that quiet students are inclined to participate more equally in these environments. In comparison, in a face-to-face classroom, at times, certain students are more dominant and aggressive than others. In online environments, however, this dominance appears to be minimal, since everybody is able to contribute simultaneously[57] without the need to take turn as mentioned earlier.

Furthermore, when contributing to online discussion, for example, students could revise their messages as many times as they like before posting them. This flexibility in terms of 'when' to post comments gives them some confidence in themselves, knowing that their comments have been revised to their utmost ability before making them public. The increase in students' confidence should, then, translate to increased participation and postings. In a face-to-face classroom, however, students have insufficient time to revise their ideas. In this case, students are forced to produce the best in their first attempt. Obviously, this pressure may create anxiety, which could, in turn, prevent some students from participating at all. Additionally, in a face-to-face classroom, only one student can talk at a time, drawing the attention of the whole class to one person only. This experience of being at the centre of attention of others could be daunting and overwhelming for some students. In fact, it is during this process that a feeling of embarrassment and losing face mentioned earlier may occur.

All in all, online learning environments appear to be less intimidating when it comes to student participation. This finding concerning the friendly nature of online learning and its capacity to promote student participation corroborates previous studies (e.g. Blake 2005; Freiermuth 2001; Gold 2001). In particular,

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[57] However, while this can be advantageous in terms of allowing all students to contribute to the discussion simultaneously, it could also create confusion, particularly when every student tries to post a new thread at the same time, rather than respond to previous messages. Thus, teachers need to ensure that there is always a balance between students postings new threads and responding to previous messages.

Blake examines the perception of Spanish learners on online language learning and reports that "online learners also mention that they find it much less stressful to learn language online than in a conversational language class where the potential for *public embarrassment* is greater" (p. 500 – emphasis added). Blake's findings clearly suggest that online environments have the potential to engage students who may otherwise be disinclined to participate in conventional face-to-face classroom activities due to constraints mentioned previously, and this conclusion is well in line with the findings of the present study.

5.5 The Value of Online Quizzes

Another interesting phenomenon worthy of comment concerns how students across the three different groups perceived the usefulness of quizzes. Although the three groups did identical quizzes, albeit different formats, only students in online and hybrid environments explicitly reported the usefulness of these quizzes for their learning with the online group reporting the benefit of these quizzes more frequently than the hybrid group. Thus, the online group appeared to be more impressed with, and appreciative of, their experience with quizzes compared to the other groups, particularly the face-to-face group.

As noted earlier in chapter four, the difference in quiz formats (online and paper-based) might be responsible for students' experience with quizzes. Obviously, online quizzes were not only more interactive than paper-based quizzes, but they were also more attractive because students could check their answers straightaway simply by clicking a button. With paper-based quizzes, however, students needed to check their answers by consulting the answer key. Not only was this process more time consuming, it was also less interactive. Perhaps it was, in fact, this interactive nature of online quizzes that made them more appealing than their paper-based counterparts.

Interestingly, previous studies (e.g. DeSouza & Fleming 2003) reported that students doing online quizzes performed better than their classmates doing paper-based quizzes in their exam, suggesting that students doing online quizzes had better comprehension of course materials. The superiority of online over paper-based quizzes may be attributed to a number of factors. Firstly, because

online quizzes provide immediate feedback, they allow online students to do more quizzes than their face-to-face counterparts with the same amount of time. This should then translate to more feedback received and more exposure to cases. Secondly, because online quizzes can be more attractive, due to their interactivity, they are more motivating than their paper-based counterparts and students may, accordingly, be more willing to spend more time doing quizzes. Needless to say, the effect of quiz formats on students' learning and learning outcomes could become another interesting avenue for future research. Questions that worth investigating include, but are not limited to, whether the positive effect of online quizzes is consistent across various fields and contexts; and, if so, what exactly makes online quizzes superior to their paper-based counterparts – what particular characteristics there are that are responsible for the superiority of online quizzes. Understanding these questions is critical since they could have a direct implication on instructional design for both face-to-face and online instruction. For example, if online quizzes prove to be more effective than their paper-based counterparts, then even conventional face-to-face classrooms may seek to integrate online quizzes into their curriculum, rather than administering paper-based quizzes during class time. This way, much class time could be saved and be used instead for other activities, such as discussion and presentation.

5.6 The Flexibility of Online Learning and Teacher Immediacy

Online and hybrid students also reported that online learning was more flexible, which enabled them to learn 'anywhere', 'anytime' (Bourne, Harris & Mayadas 2005) – two most frequently reported benefits of online learning cited in the literature. Unlike face-to-face instruction where students are required to come to a classroom at a particular time, online learning methods enable them to access course materials anytime, anywhere, and engage in discussion with classmates wherever there is a computer and Internet connection. Some students appreciated the absence of a face-to-face meeting because it enabled them to deal with other commitments outside the classroom, and also because it enabled them to have more control of their own learning. Consistent with findings reported by previous studies, the flexibility of online learning has been identified as a positive learning

experience by students participating in the present study (see sections § 4.1.1.1.7 and § 4.1.2.1.6 for further details).

For some students, however, the absence of face-to-face contact is regarded as one of the drawbacks of online learning methods. In fact, it is the most widely reported drawback as far as online learning is concerned. These students clearly expressed their preference for face-to-face over online instruction for various reasons. For example, some students prefer face-to-face instruction because they just wanted to listen directly to the teacher's explanation in a face-to-face classroom, rather than through computer-mediated communication. Others preferred face-to-face methods simply because they could not concentrate when exposed to a computer screen for a longer period, or simply because they believed that they could understand course materials better if taught face-to-face, rather than reading from the computer screen. There are also students who reported that the perceived lack of a teacher's monitoring and supervision in an online learning environment affected their motivation to participate, knowing that the teacher was not physically there to watch over what they were doing. Thus, while online learning seems to perfectly suit the needs of some students, it is clear that, for others, technology cannot wholly replace face-to-face contact with the teacher.

In comparison, the most commonly reported positive learning experience by face-to-face students concerns teacher immediacy (see section § 4.1.3.1.1 for more discussion). As evident from their comments, students attributed their learning mainly to the teachers, rather than to their own efforts. Thus, teacher immediacy plays a crucial role in student learning. This is not surprising given the fact that a teacher has played a central role in student learning throughout the history of their education, from primary school up to tertiary education. Perhaps it is this assumption regarding the central role a teacher plays in their learning that leads some students to believe that learning could only occur if the teacher is there in a face-to-face classroom to help them learn (Spooner *et al.* 1999; Terry & Lewer 2003).

Additionally, for some students, it is the physical presence of the teacher that motivates them to engage in class activities. Such students would normally require constant guidance from the teacher and would, by and large, prefer the

teacher to teach them course materials directly, rather than trying to learn them on their own. Similarly, when they encounter a problem in their learning, they would rely heavily on the teacher for help, rather than trying to find a solution themselves. Because the teacher plays such an important role in the learning for this type of student, the absence of the teacher could be detrimental not only to their motivation to learn, but also to their learning as a whole. However, there are also students who could take full responsibility for their own learning, not needing to rely on their teacher for their learning. These types of students are commonly referred to as self-regulated learners (Zimmerman 1990).

5.7 Self-Regulation and Learning Styles

Self-regulated learners are those who set their own goals, develop effective strategies to achieve those goals, and are less dependent on their teachers for their learning (Zimmerman 1990). Whether or not the teacher is physically present does not make much difference. Whether or not the teacher is good or bad, friendly or less friendly does not affect them much. By the same token, when faced with challenges and difficulties in their learning, self-regulated learners would tend to find a solution themselves, rather than rely on the teacher for help. In comparison, students who are not self-regulated in their learning would be prone to giving up when faced with such difficulties. Thus, self-regulated learners are more likely to succeed in their learning, regardless of mode of delivery.

However, the issue of self-regulation in learning is particularly relevant to online learning. Naturally, online learning requires that students take a greater level of responsibility for their own learning than required for students in a conventional face-to-face classroom (Chang 2005). For example, in the absence of the teacher, students may always choose whether or not to study course materials, participate in online discussion, try to find a solution to the problem they may encounter while studying course materials, etc. Similarly, in the absence of the teacher, students need to interpret and understand course materials themselves, rather than relying on the teacher to explain these materials to them. All in all, in the absence of the teacher in online learning environments, students have to deal with their problems on their own. Obviously, this is not such an easy task,

particularly for those who are used to being dependent on their teacher for their learning. In other words, online learning may prove to be particularly challenging for students who are not self-regulated in their learning.

In addition to self-regulation, learning styles could also become one factor affecting students' perceptions of the effectiveness of online learning (Felix 2004; Lu, Yu & Liu 2003; Sauers & Walker 2004). In other words, students with a certain learning style may tend to perceive online learning environments to be more positive than those with other learning styles. Consequently, online learning may be more advantageous for students with a certain learning style than for the others, thus affecting students' success rates when learning in these environments (Terrell 2002). For example, echoing the literature, Lu, Yu and Liu (2003) note that whereas field-independent students could learn best in the environment where face-to-face contact is absent, field-dependent learners would find it difficult to cope with learning in such an environment. However, as mentioned above, learning styles alone are just one factor affecting students' perception of the effectiveness of online learning. Other factors, such as students' computer skills, cultural, sociocultural, and economical backgrounds, belief in and attitude to technology, etc., may also come into play, in addition to factors intrinsic to technology, such as connection speed, reliability of the technology, etc.

Thus, since students' have different characteristics, self-regulation strategies, attitudes and learning styles, it therefore appears sensible to suggest that online learning may not be able to suit every student's needs (O'Neill, Singh & O'Donoghue 2004). Whereas some of the challenges reported by online students in the present study, such as technical problems, lack of computer literacy, etc., can be dealt with, little can be done about students preferring face-to-face over online instruction simply because they believe that they cannot learn effectively in this environment or because they just don't like working with computers, for example. The fact that the absence of face-to-face contact has been the most frequently reported negative experience by online students, and that teacher immediacy has been the most frequently reported positive experience by face-to-face students, further corroborates the conclusion that, for some students, face-to-face contact with the teacher is still necessary.

5.8 A Decrease in Participation and the Phenomenon of Lurking

Another important finding that is worth touching on, as far as online learning is concerned, is the decrease in students' participation over time and its impact on students' motivation. As noted by some participants, online students were inclined to participate actively in the bulletin board discussion only during the first few weeks and this participation attenuated as the course progressed. A similar finding is also reported in previous studies (e.g. Matusov 2005). Interestingly, this decrease in participation has a significant effect on students' motivation and evaluation of online learning as a whole. For example, one student described how the interesting learning environment became dull, primarily due to a progressive decrease in students' participation in the bulletin board discussion. Thus, it appears that keeping up students' participation levels in online discussion is especially important for the above reason.

Online teachers should always ensure that all students actively participate in and contribute to online discussion and, most importantly, that this participation is sustained throughout the whole semester. While this is not an easy task, online teachers should try to employ different approaches to promoting students' participation; for example, by sending personal and 'friendly' messages to those who have not been participating for a certain period of time and encouraging them to engage in the discussion. Another approach is to post questions or problems to the forum and encourage passive learners to respond to these questions by addressing them by their first names. For example, "John, what is your opinion about this?" Needless to say, these questions should not be too difficult for them. This way, passive learners would feel that the teacher pays attention to them and, hopefully, this will encourage them to further engage in the discussion. Alternatively, teachers could also assign students to take turns leading online discussion or responding to queries. Of course, this arrangement needs to be discussed with the class beforehand, and rules concerning its implementation should be agreed upon by both the teacher and the students. Finally, teachers could also make participation in an online discussion compulsory for all students. In this case, participation contributes a certain percentage to students' overall course grade. All in all, both non-participation and a decrease in student

participation in online discussion could have a negative effect on student learning and the learning experience. Online teachers should try different approaches and see for themselves which approach works and which one does not. Obviously, a certain method that works in one particular context may not necessarily work in others.

Apart from a decrease in student participation in the bulletin board discussion, another challenge for online learning observed in the present study concerned the fact that not all students were actually engaged in the bulletin board discussion and sharing of ideas with others. Although they frequently viewed discussion threads posted by classmates, these students did not necessarily respond to those messages. This phenomenon is commonly referred to as 'lurking' in the literature (Preece, Nonnecke & Andrews 2004). Rafaeli, Ravid and Soroka (2004) provide a simple definition of lurking, that is, "passive attention over active participation" (p. 1). In other words, lurkers are "learners who are bystanders to course discussions, lack commitment to the community, and receive benefits without giving anything back" (Rovai 2000 p. 291). Lurking could potentially reduce and diminish interactions among the learners by promoting distrust among members, thus reducing the sense of community. Thus, lurking proves to be another challenge for online teachers. Strategies for dealing with a decrease in student participation suggested previously may be considered when dealing with this phenomenon.

The above phenomenon of lurking is interesting and, at the same time, puzzling, because it seems to be contradictory to findings discussed previously that online environments promote active participation. Follow-up interviews with some of the online students revealed that two major reasons were responsible for the above phenomenon of lurking. Firstly, students felt that questions or queries posted in forums had been sufficiently responded to or addressed by others, and they just did not want to say the same thing, over and again. Secondly, these students just had no idea, or were not too sure, of what to say in relation to messages or queries posted by others. As a result, all they could do was to 'watch' the discussion and contributed only when they had some idea regarding the topic. Thus, it appeared that lurking or non-participation observed in the present study

was not attributed to the learning environment, in that it was not due to the intimidating nature of the communication media. With this in mind, perhaps it is fair enough to suggest that the phenomenon of lurking observed in the present study does not contradict findings reported earlier that online environments promote participation.

Nonetheless, online teachers should always pay particular attention to the phenomenon of lurking simply because, as mentioned above, lurking could promote distrust among students – a situation that can be detrimental to a learning community. Perhaps online teachers could emphasise the need to contribute to online discussion by, for example, making it clear that it is not about offering the best idea; rather, it is about sharing ideas with others that is more important. This way, students do not need to worry about whether or not their responses would win them a 'Noble Prize'.

5.9 Hybrid – "The Best of Both Worlds"

When students' reported negative experiences were compared across the three groups, online students reported the most negative experience, followed by hybrid and face-to-face groups. Thus, a hybrid format appears to be more viable than a pure online format. This does not, however, mean that an online method is inferior. On the contrary, some students could perform better in an online learning environment and, at the same time, have very positive attitudes to this mode of delivery. It is just that students have diverse characteristics that cannot simply be accommodated by an online mode of delivery, which requires that all students be independent in their learning. While students who are independent, self-regulated in their learning, and prefer flexibility may, for example, find online learning suitable for them, those who are reliant on their teacher for their learning may find it particularly challenging. By the same token, while some students may have a positive attitude to the integration of technology into the curriculum, others may not be as positive.

That a hybrid format appears to be more desirable than a pure online format is understandable given that hybrid combines both face-to-face and online modes and is, therefore, more capable of accommodating diverse characteristics

of the learners compared to a pure online format. This conclusion regarding the viability of hybrid instruction is supported by both students' reflections on their learning experience and their test scores. As far as students' responses are concerned, as mentioned previously, minimal negative experience was reported by students in a hybrid format compared to that in a pure online format, both in terms of its type and its frequency. In terms of students' learning outcomes, as indicated by pre- and post-test scores, students attending the hybrid mode of instruction achieved the highest gain scores, although the difference in students' post-test scores after keeping the pre-existing difference in the pre-test constant, proves to be insignificant.

Therefore, if online learning is to be introduced to these student populations and with a subject similar to that experimented in the present study, perhaps the most feasible option is hybrid instruction. This is a win-win solution for all because, as mentioned previously, students who prefer independence and time flexibility would benefit from an online format, whereas those who prefer face-to-face contact with the teacher would take advantage of face-to-face sessions. Also, a hybrid format is less radical than a pure online format in terms of changes in mode of delivery. Because a hybrid mode combines both face-to-face and online formats, it has been thought of as "the best of both worlds" (Ward 2004; Young 2002), and this contention is supported by the findings of the present study.

5.10 Critical Success Factors in Online Learning

Researchers engaged in the debate over the effectiveness of online learning relative to conventional face-to-face classroom instruction (e.g. Detwiler 2008; Pucel & Stertz 2005) tend to focus their argument on whether or not technology matches face-to-face classroom instruction in terms of providing students with quality learning and learning experiences. In other words, there is an implicit assumption behind the debate that it is technology that affects students' learning and learning experiences. One of the discrepancies in such a debate is that it tends to underestimate other important factors which may properly define the effectiveness of online learning relative to conventional face-to-face classroom

instruction apart from a technological factor. Dillon and Gunawardena (as cited in Volery & Lord 2000) are amongst the few researchers who recognise the importance of these factors, such as student characteristics and teacher characteristics, in affecting student perceptions of the effectiveness of technology. However, even these researchers failed to account for the importance of pedagogy and unit characteristics in a technology-based environment. These factors will all be discussed below.

To begin with, as mentioned earlier, student characteristics play a major role in defining the effectiveness of online learning relative to conventional face-to-face instructional methods (Yukselturk & Bulut 2007; Colorado & Eberle 2010). In the present study, for example, while some students indicated quite clearly that online learning worked best for them, and looked forward to future online instruction accordingly, others reported that they would prefer conventional face-to-face teaching for various reasons. Clearly, this indicates that students' characteristics do affect their perceptions of the effectiveness of technology in their learning. The fact that online students reacted differently with respect to using technology in learning, albeit being exposed to a similar learning environment and technology, provides support for the above contention.

As mentioned previously, self-regulated learners may have different perceptions from non-self regulated learners (O'Hanlon 2001); students who are familiar with technology may have different perceptions from those who are not (Wood *at al.* 2005); students who have a positive attitude to technology may have opinions and beliefs different from those who do not (Ray *at al.* 1999), etc. To put it more bluntly, because students have different characteristics, social backgrounds, experience with technology, personal beliefs, etc., we cannot expect all students to have the same perceptions with respect to using technology in learning. In this case, the effectiveness of technology is relative to students' personal characteristics and is not an exclusive attribute of the technology alone (Aditiwarman & Hussein 2007). Therefore, the debate over the effectiveness of technology-enhanced learning should be geared toward understanding what types of students work better online and what types of students thrive in a conventional face-to-face classroom and this debate should go beyond learning styles.

Understanding this question is critical, because it has significant implications for helping students learn more effectively by providing learning environments that best suit their unique characteristics and needs.

Another important factor is the role of pedagogy or instructional design in promoting quality learning in an online environment (Cooze & Barbour 2007). While technology or a learning environment has always been assumed as the most important factor affecting student experiences with online learning, there is a growing recognition of the role of instructional design. In fact, some researchers even go as far as to suggest that pedagogy is more important than technology as far as the effectiveness of online learning is concerned (Rovai 2002c). In other words, so this argument goes, the effectiveness of technology-enhanced learning depends crucially on the types of pedagogical approaches employed, rather than on the technology. Therefore, use of different pedagogical approaches (for example, Constructivism and Behaviourism, or teacher-centred and student-centred) may yield different learning experiences, thus different perceptions of the effectiveness of technology in learning.

Following on from the above, it is clear that students' perception of the effectiveness of online learning is not an exclusive attribute of an online learning environment. This is because students may react quite differently to different online instructional strategies, and such reaction should be attributed not only to the learning environment or technology, but also to the particular instructional design. Thus, examining the effectiveness of online learning also means examining the effectiveness of a certain pedagogical approach applied in that learning environment (Zhao 2005b). Just because students have negative experiences with online learning employing a teacher-cantered approach, for example, does not necessarily mean that online learning is inferior. Nor does it mean it is superior because students have positive experiences. Online learning is just like conventional face-to-face classroom instruction, in which case the role of pedagogy significantly impacts on student learning experiences (Stone & Perumean-Chaney 2011). Obviously, even in a face-to-face classroom, students may react differently to different instructional strategies and, again, such reactions cannot be attributed solely to the learning environment. In the present study,

students in the three groups indicated that they enjoyed their learning experiences over the course of the semester, primarily because they experienced social interaction in their learning as is evident from their comments. Obviously, their responses to their learning experiences would have been different if they were not afforded social interaction in the first place.

Because pedagogy plays such an important role in engendering student learning experiences in an online learning environment, some researchers (e.g. Rovai 2002c) go on to argue, as already mentioned above, that it is not the technology that dictates the effectiveness of online learning, but rather, the pedagogy. However, as I suggest below, my position with respect to the role of technology is less radical, in that I believe that technology cannot be underestimated when discussing the effectiveness of technology in learning (Malik & Shabbir 2008). While pedagogy undeniably plays an important role in online learning, not much will be achieved without the availability of technology that is capable of supporting the implementation of such pedagogy (Kozma 1994). If technology does not really matter, then we do not need to worry about which communication media to use for achieving certain instructional objectives. In fact, the choice of which communication media to utilise becomes one of the most important considerations when implementing online learning (Zhao 2005b). For example, synchronous communication is more preferable than asynchronous for certain online activities, and the reverse is also true. In this case, the role of technology lies in its capability of supporting the implementation of a certain instructional design. It is a fallacy, therefore, to assume that sophisticated technology alone will enhance learning; yet, without appropriate technology, sound pedagogy becomes meaningless. Similarly, online learning will just become a frustrating experience if the technology is not reliable (Beard & Harper 2002). Therefore, both pedagogy and technology should be taken into account when discussing the effectiveness of online learning.

The next factor that needs to be considered when assessing the effectiveness of technology-enhanced learning is the teacher (Díaz & Entonado 2009). In this case, at least two factors are of interest: the teacher's facilitation skills (O'Grady 2001) and the teacher's attitude to and belief in technology

(Kimber & Wyatt-Smith 2006). To begin with, the teacher's facilitation skills play an important role in the success of any online learning program because they facilitate the flow of online discussion and, at the same time, promote the teacher's presence (Anderson *et al.* 2001) and student participation. As reported by some students in the present study, they were reluctant to participate in or contribute to online discussion simply because they felt there was a lack of supervision from the teacher. This could simply be due to the teacher's lack of facilitation skills, which failed to promote the teacher's presence in an online environment. Therefore, online teachers should be capable of facilitating online discussion and sharing ideas among students, and promoting their presence so that students feel that they are not left alone in cyber space. Posting questions, providing timely feedback, attending to student queries immediately, ensuring that students post comments regularly, asking students to clarify their points by referring to their names, encouraging and motivating students, particularly passive ones, to engage in an online discussion could promote not only the teacher's presence in an online environment, but also student participation and active engagement.

Additionally, the teacher's attitude to and beliefs in technology also plays a crucial role in the success of any online learning program (Kimber & Wyatt-Smith 2006). Obviously, it is very difficult to imagine that an online program will ever succeed if the teacher him/herself does not believe in the use of technology in education. The teacher him/herself must have a positive attitude to online learning before s/he expects his students to develop a positive attitude to this learning environment. Additionally, the teacher's skills in facilitating online discussion also play a crucial role in the success of an online program. It takes a skilful teacher to make online environments an interesting place to learn and share ideas. Put simply, the teacher's attitude and belief in technology, as well as their skills, play a crucial role in the success of online learning programs.

Finally, unit characteristics are also important in defining the effectiveness of online learning (Reasons *et al.* 2005; Banas & Emory 1998; Rovai & Barnum 2003). Instinct tells us that, while certain units such as English Grammar can be taught entirely online, there are units, such as chemistry, that cannot be taught

exactly the same way. Because each unit has its own unique characteristics, different ways of teaching and learning are required. Therefore, while pure online learning may be effective for certain subjects, it may not necessarily be as effective for others (Banas & Emory 1998). As I have suggested previously, both conflicting and inconsistent findings reported by previous studies may simply be attributed to any of the above factors, so research into the effectiveness of online learning should take these factors into account.

To sum up, researchers involved in the debate over the effectiveness of online learning appear to implicitly suggest that it is technological factors that engender student learning experiences in an online environment. However, I suggest that there are at least five factors that could influence student experiences with online learning: student characteristics, pedagogy, technology, teacher characteristic and unit characteristics. Student characteristics are important because, while some students are in favour of online instruction, others prefer face-to-face teaching. This difference in mode preferences will obviously affect their perception and evaluation of online learning environments. Pedagogy is also important because students may respond differently to different instructional strategies in an online environment, which in turn, affects their perception of the learning environment. Similarly, technology is important because sound pedagogy must be supported by reliable and appropriate technology for it to work effectively. The teacher's attitude to and belief in technology is crucial because such an attitude may be contagious to students. Unit characteristics are also relevant, for while some units can be taught wholly online others do require face-to-face contact.

It is worth restating here that we should not expect quality learning simply by providing sophisticated technology; it is how technology is utilised to support sound pedagogy that engenders positive learning experiences, rather than its mere existence.

5.11 Implications of the Research

This study represented the first time that both Web-based and hybrid learning strategies were introduced to student populations from Haluoleo University in

Indonesia, so the results of the present study provide very useful insights into student perceptions of and attitudes to technology-enhanced learning in this particular context. This study is important because no such studies have previously been conducted with student populations at this University. While there are a number of limitations in the study design, as discussed in the 'limitations' section, the present study has significant implications for the integration of technology into the EFL classroom in this particular context.

To begin with, student learning outcomes and learning experiences help us to better understand the relative effectiveness of each of the three different modes of instruction for teaching English Grammar in this particular EFL context. Although the three groups performed equally well, as indicated by their test scores, it was obvious that an online learning strategy was more challenging than the other formats – the online group reported the most negative learning experiences, both in terms of types and frequency. Obviously, in the absence of face-to-face contact with the teacher and classmates, made worse by other negative experiences, online students were prone to negative experiences more than those in hybrid and face-to-face formats as is evident from their comments on their online learning experiences.

Thus, online teachers should always be sensitive to potential problems associated with online environments and efforts should be made to address these problems prior to the implementation of an online learning program. In the present study, for example, technical problems were reported by students as a significant factor contributing to their negative experiences with online learning. In fact, due to these problems, some students clearly indicated that they would prefer face-to-face instruction instead, in which case they did not need to worry about such problems. It is, therefore, vital to ascertain that the technology works properly and reliably, including issues related to compatibility of software and hardware, before introducing an online program. This is because technological breakdowns or failures can be very frustrating, as is evident from student comments about their online experiences. The role of reliable technology is critical because student perceptions of an online environment are very much affected by their experiences when using technology in their learning. While online learning has great potential

as a viable mode of delivery, careful thought should be given to its preparation, design and implementation so that any potential problem, particularly that related to technology as mentioned above, can be sufficiently addressed prior to the implementation of an online learning program. Most importantly, students and teachers should be provided with reliable technical support.

The present study also points to the need for providing orientation and computer training to students prior to implementing an online learning program, especially training on how to use the Internet. With the ubiquity of computers these days, it is always tempting to assume that all students coming to a classroom already have good computer skills. In fact, this is not always the case. In the present study, for example, while some students already had excellent computer skills prior to taking the unit, some students did not even have experience of moving a mouse. Therefore, it is always important to ensure that students all have sufficient computer skills to start with and that computer training is provided to those in need. Online teachers should not blindly assume that, just because computers have now become ubiquitous, students must all be computer literate. Instead, students' computer literacy should be carefully assessed to ensure that they all have minimal skills to access the Web and use the communication tools provided. This can be done by, for example, asking students to identify their own computer literacy, including their experience with browsing the net and to gauge their confidence with using the Web. Similarly, computer and Internet training for teachers should also be considered if necessary. Such basic skills as uploading course materials, providing feedback online, troubleshooting software failures, facilitating online discussion, etc., should be provided to online teachers. Obviously, unless the teacher is equipped with skills necessary to effectively and efficiently function in an online environment, it is very difficult, if not impossible, to expect that online strategies will be perceived as a viable mode of delivery by students.

Furthermore, the present study suggests that, although some students could work independently in an online environment and appreciated the flexibility and independence offered by such a learning environment, others just could not cope with the absence of face-to-face contact with the teacher and classmates. These

students reported that they needed direct teaching and guidance in a face-to-face session with the teacher. In fact, as mentioned earlier, one of the most commonly reported negative learning experiences by the online group was the absence of face-to-face contact with the teacher. This suggests that, while an online strategy works for some students, *it does not necessarily work for all.* Similarly, while some challenges reported by the students, such as technical problems, lack of computer literacy, etc., can be anticipated, little can be done with students selecting face-to-face instruction, simply because they just cannot stand prolonged exposure to the computer screen as reported by some students in the present study. Therefore, while there is a prediction that "online learning is the future of education" and an increasing number of universities worldwide have now embraced online learning, the present study clearly suggests that technology cannot completely replace face-to-face contact with the instructor, and this remains an important aspect of student learning. Of course, as student computer literacy continues to improve and as technology becomes more reliable and accessible, it is expected that more students may opt for online learning, but, as mentioned above, face-to-face contact with the teacher can not be removed completely, at least for some students.

The change in a delivery format from a face-to-face to an online environment requires that students adjust their learning strategies, which are very different from those applied in a face-to-face classroom. While this process may not be so difficult for some students, it may prove to be quite a challenging task for others. Therefore, it is important that online teachers provide scaffolding to those students who may experience difficulties during this process of adjustment to a new learning environment. Online teachers should immediately attend to students' queries, provide them with immediate, rather than delayed, and personal feedback, and continuously encourage them to participate in online discussion. Undoubtedly, while some students may end up adjusting successfully to learning in a new environment, others may continue to believe that technology is not for them and would prefer face-to-face instruction instead.

Thus, the effectiveness of online learning may, partially, be defined as the extent to which an online environment matches the individual characteristics of

the students. The implication is, therefore, that identification of the types of learners who are most likely to succeed in an online environment and those who are better in a face-to-face classroom is crucial if we are to use technology to enhance learning. Unless we have a better understanding of student characteristics (including, but not limited to, learning styles, mode preferences, attitude to and belief in technology), we will continue to use technology where the face-to-face mode of delivery is probably more appropriate and vice versa.

Nonetheless, students should always be given options with respect to which mode of instruction they would like to have and, most importantly, teachers should help them make an informed decision. For example, before taking an online unit, teachers should make it very clear from the outset about what is expected of the students, what types of online activities they will be engaged in, how their performance will be evaluated, how support will be provided, how technical problems will be dealt with, how often they will be required to participate in online discussion, and so on and so forth. Being aware of what to expect when taking an online unit helps students make informed decisions concerning which delivery format they would prefer. This also helps them psychologically prepare for challenges and difficulties in such learning environments.

Unfortunately, at times, students self-select an online unit simply because it is more flexible than face-to-face classroom instruction, without realising what exactly is expected of them in such an environment. Only when the unit is in progress do they realise that it is actually more challenging than what they had originally expected. It is this discrepancy between their expectations and the reality that often contributes to student disappointment with online instruction. Thus, familiarising how online learning works as well as clarifying what is expected of the students in such a learning environment from the very beginning is critical, for it may help students make the right decisions concerning delivery mode, thus avoiding unnecessary hassle from both the students and the teacher.

The present study also suggests that online learning enables shy and reluctant students to participate in and contribute to discussion, which does not normally happen during face-to-face classroom instruction. This phenomenon was

reported by students who identified themselves as non-contributors in a face-to-face classroom and by their classmates who were surprised by the active participation of these students in an online environment. In a foreign language context, students are normally reluctant to participate because they are afraid of making mistakes, which can lead to public embarrassment and losing face. Interestingly, as reported by some students, such a concern appears to be minimal in an online environment, primarily due to the physical absence of classmates and the teacher in such an environment. Although they might make irrelevant points during online discussion, they were not concerned as much as they would be during a face-to-face discussion. The implication is that online discussion may be provided as an alternative to face-to-face discussion for students who find face-to-face discussion intimidating. Perhaps it is even sensible to suggest that, as far as class discussion is concerned, students should be given a choice concerning learning environments options. In this way, they can decide for themselves which learning environments suit them best based on their first-hand experience.

As mentioned previously, students across the three groups also reported that they experienced dynamic interaction with both classmates and the teacher over the course of the semester. For online students, this interaction occurs through synchronous and asynchronous communication. This suggests that the constructivist pedagogy, which places a great emphasis on social interaction in knowledge construction (i.e. learning), is relevant and can be implemented across the three different modes. I would, however, suggest, following Felix (2002), that the constructivist pedagogy is especially relevant for an online environment due to the fact that social interaction in these environments is not constrained by place and time as is the case with interaction that takes place in a face-to-face classroom. However, at the same time, the application of such pedagogy is more challenging in an online environment due to the physical distance between the teacher and the students and the absence of verbal and non-verbal cues, such as tone and body language which are crucial to providing scaffolding to students.

Although the present study suggests that a hybrid model appears to be more desirable than a pure online format in terms of reducing student negative experiences and an increase in student test scores, there are a number of issues

worth further investigations. For example, the present study used only fifty percent of total face-to-face allocated class time (i.e. one and a half hour out of a three-hour class time). These face-to-face sessions were used for such activities as review of materials studied in previous weeks, introduction to fortcoming materials, question and answer (consultation), and discussion, while online sessions were used for accessing online materials, bulletin board discussion, chatting, e-mailing, and online quizzes. An important question worth asking is how changes in time allocation for face-to-face sessions (either addition or reduction) may have implications on students' learning and learning experience. Future research could, therefore, examine which combination of online and face-to-face is more effective for a hybrid method; that is, that combines the strengths of each mode (Martyn 2003), rather than their weaknesses. The major question worth investigating here is how much online and how much face-to-face is most appropriate for a hybrid method.

Apart from the issue of time allocation, another important issue is deciding on which activity is better conducted face-to-face and which activity is better conducted online. It is important that this decision be backed up by a sound pedagogical approach; it is not just a decision that is based on mere convenience. To better understand the best hybrid practice, future research could examine how students perceive identical learning activities conducted in both face-to-face and online environments, and investigate what activities they think may be better conducted online/offline and why. Only by exploring these questions can we better understand which learning activity is better conducted in what learning environments from the standpoint of the students, thus maximising the role of technology and a face-to-face session in enhancing learning.

When employing a hybrid strategy, the first question to ask is what the objectives of a unit are; what sorts of skills are expected of the students after taking the unit and how these skills are going to be learned. From there, a teacher can then think about how these objectives can be achieved, that is, what activities can promote the accomplishment of these objectives. Having identified the kind of activities, the teacher can then decide what learning environments are best to support the implementation of these activities. Of course, the decision concerning

which activities are conducted off line and which are conducted online also depends crucially on the nature and characteristics of the subject in question. Nonetheless, both online and offline activities should be related to and support each other in achieving unit objectives. Thus, hybrid teaching is not just conducting one part of the lesson in a classroom, and leaving the rest online; the decision concerning which part of the lesson is conducted in which environment should be based on the consideration that it makes use of the strength of a given learning environment and is informed by a sound pedagogical theory of learning.

Last, but not least, once the hybrid model has been developed, it is necessary that it be tested and applied to participants from different social contexts and with different units to see how consistent the model is. Obviously, this will involve continuous modification before a robust model can be recommended with a high degree of confidence. Testing this model with other units is particularly important simply because each unit has unique characteristics, which may require different ways of not only teaching it, but also learning it. For example, in the context of teaching English as a Foreign Language, particularly as far as the teaching of each skill is concerned, speaking skills might require different approaches from reading and grammar. Understanding how technology could be best utilised to support face-to-face classroom instruction is critical, for it enables the accommodation of different characteristics of the students and different characteristics of the units, thus enhancing learning.

5.12 Chapter Summary

This section suggests that, while students attending online and hybrid instruction may learn as well as those attending conventional face-to-face classroom instruction (as indicated by their test scores and comments on the quality learning they experienced), online learning appears to be more challenging than the other formats. Online students reported the most negative learning experiences, both in terms of types and its frequency. While some online students indicated that they were in favour of online instruction due to its flexibility in terms of time and place and to the independence afforded by such a learning environment, others reported that they would prefer face-to-face classroom instruction instead. Naturally, online

learning requires that students take a greater level of responsibility for their own learning than required of students in a conventional face-to-face classroom.

Students have different characteristics when it comes to learning. While online learning may suit the needs of independent and self-regulated learners, it may fail to satisfy the needs of those who are reliant on their teacher for their learning. While some of the challenges reported by online students in the present study, such as technical problems, lack of computer literacy, etc., can be dealt with, little can be done about students selecting face-to-face over online instruction because they believe that they cannot learn effectively in an online environment, or simply because they just don't like working with computers. The fact that the absence of face-to-face contact has been the most frequently reported negative experience by online students and that teacher immediacy has been the most frequently reported positive experience by face-to-face group further corroborates the conclusion that, for some students, face-to-face contact with the teacher cannot be replaced by technology. In fact, for some students, it is the physical presence of the teacher that motivates them to learn.

Thus, a hybrid format appears to be more viable than a pure online format. This conclusion regarding the viability of hybrid instruction is supported by both students' reflections on their learning experience and their test scores. As far as students' responses are concerned, minimal negative experience was reported by students in a hybrid format compared to that in a pure online format, both in terms of its type and its frequency. In terms of students' learning outcomes, as indicated by pre- and post-test scores, students attending the hybrid mode of instruction achieved the highest gain scores, although the difference in post-test scores, after keeping the pre-existing difference in the pre-test constant, proves to be insignificant. Despite this, however, research needs to further explore the most effective way of designing hybrid learning, both in terms of the kind of the activity that needs to be conducted online and offline and the ideal amount of time spent during a face-to-face session.

Furthermore, while there is the belief that an online learning environment promotes student isolation due to the distance between the teacher and classmates and to the nature of the communication media, I suggest that it may not be so

much the communication media that promotes this sense of estrangement, but the non-participation in the social interaction with others that engenders this negative experience. In fact, even students in a face-to-face classroom may well experience this feeling of isolation if they are not involved in social interaction with others. Thus, social interaction plays a crucial role in promoting a positive learning experience and in combating a feeling of isolation among students, regardless of mode of instruction, but it is particularly important in an online learning environment where face-to-face contact is missing.

The findings of the present study suggest that online learning environments are particularly beneficial for shy and reluctant students who may otherwise refrain from participating in, or contributing to, face-to-face discussion and sharing ideas with others. For some students, participation in a face-to-face classroom could be a daunting experience as is evident from their comments reported earlier. In an online environment, however, these students appear to be more willing to participate due to the physical absence of others and to the less intimidating nature of the communication media. However, it is necessary to keep student participation in an online environment steady because this participation tends to undergo a decrease over time and, most importantly, this decrease can negatively affect the motivation of the entire class.

Finally, the effectiveness of online learning is not just influenced by technology, as is commonly implied in most of the literature of online learning. Other factors, such as student characteristics, teacher characteristics, unit characteristics and, most importantly, pedagogy, also play a crucial role in engendering positive student online experiences. Strictly speaking, it is not technology, per se, that actually affects learning, but rather *how* technology is utilised. Web-based environment employing different pedagogical approaches may, therefore, result in different learning and learning experiences. In fact, this is exactly the case with face-to-face teaching. Thus, simply providing technology without sound pedagogy in place will not result in effective learning. Similarly, student characteristics also play an important role because while some students can work independently, others are dependent on the teacher for their learning. However, as mentioned previously, the increasing spread of technology will result

in a greater proportion students becoming more familiar with it which may, in turn, influence their learning styles and mode preference. Teacher characteristics are relevant because online learning will work only if taught by teachers who have a positive attitude to technology in the first place. Similarly, unit characteristics are important because while some units can be taught entirely online, not all units can be taught exactly the same way.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

This chapter provides the conclusions drawn from the findings of the study. It also discusses a number of recommendations in relation to these findings and outlines the limitations of the study. The conclusions will be presented in section § 6.1 below, followed immediately by the recommendations in section § 6.2 and the limitations of the study in section § 6.3.

6.1 Conclusions

As mentioned at the beginning of this chapter, the present study sought to compare students' learning experiences, as well as their learning outcomes, as a result of attending one of the three different modes of instruction: conventional face-to-face, hybrid, and online instruction. For the sake of convenience, each research question stated in Chapter Three will be presented again along with its corresponding conclusion.

Research Question #1: What are students' general impressions of, and attitudes to, their first Web-based course in the teaching/learning of English Grammar?

    a.   What are the perceived advantages and disadvantages/drawbacks of such a learning environment?

    b.   Do the advantages outweigh the disadvantages?

    c.   Given students' overall evaluation, what is the potential/viability of Web-based courses for these students (p. 108)?

Students attending online instruction reported both positive and negative learning experiences. However, reported positive learning experiences (frequency: 101) outnumbered their negative learning experiences (frequency: 42). This finding is consistent with previous studies conducted elsewhere (e.g. Felix 2004; Chang 2000, as cited in Ku & Lohr 2003), in which case more positive than negative learning experiences were reported by online students. Thematically grouped, and

listed from the most to the least frequently mentioned, students' positive learning experiences with online learning comprise:

(a) fun/interesting learning experience

(b) gaining computer literacy

(c) interactivity

(d) opportunity for self-testing

(e) quality learning

(f) enabling of shy and reluctant students to participate

(g) flexibility

(h) no face-to-face meeting required

(i) socialisation (making friendships)

(j) easy access to course materials, and

(k) absence of noise.

In comparison, negative learning experiences, again listed from the most to the least frequently mentioned, include:

(a) absence of face-to-face contact

(b) technical problems

(c) lack of computer literacy

(d) lack of teacher's monitoring or supervision

(e) decreased participation overtime

(f) lack of immediate feedback/responses

(g) inadequate facilities (difficult to access a computer)

(h) difficult to tell whether the person on the Net is real, and

(i) the potential for non-participation

Given students' learning experiences, it is clear that online learning is a viable mode of instruction for student populations in the present study, although it is a particularly challenging one. While some students indicated quite clearly that they enjoyed their online learning experiences and looked forward to future online learning, others reported that they would prefer conventional face-to-face classroom instruction instead. Clearly, this suggests that, while an online learning method can be an appropriate delivery format for some students, *it appears that it does not necessarily work for all*. For some students, face-to-face contact with the

teacher cannot be wholly replaced with technology. While challenges such as lack of computer literacy and technical problems can be addressed, little can be done about students preferring face-to-face over online instruction. For example, many students cannot stand prolonged exposure to the computer screen or simply do not like working with computers.

Furthermore, in the absence of the teacher and classmates, online environments require that students be independent, self-regulated, and self-motivated in their learning. However, it is clear from students' comments that not everyone can take full responsibility for their own learning. Some students rely so heavily on the teacher that they barely study in the absence of the teacher. By the same token, while some students are motivated to study regardless of the teacher's presence, others are motivated only if the teacher is physically present. Put simply, because students have diverse characteristics, some are self-regulated, independent and motivated and others are not, it is clear that online learning will be more challenging for some students than for others.

Research Question #2: What are students' general impressions of and attitudes to their first hybrid course in the teaching/learning of English Grammar?

    a. What are the perceived advantages and disadvantages/drawbacks of such a learning environment? Do the advantages outweigh the disadvantages?

    b. Given students' overall evaluation, what is the potential/viability of hybrid courses for these students (p. 145)?

Like those in an online group, students in a hybrid group also reported both positive and negative learning experiences. Unlike those in an online group, however, students in a hybrid group reported less negative learning experiences, both in terms of its type and its frequency. Reported positive learning experiences (frequency: 82) far outnumbered their negative learning experiences (frequency: 8). Students' positive learning experiences associated with hybrid instruction, listed from the most to the least frequently mentioned, include:

(a) fun/interesting/comfortable learning experience

(b) gaining computer/internet literacy

(c) quality learning

(d) interactivity

(e) course satisfaction

(f) flexibility

(g) socialisation (making friends)

(h) easy access to course materials

(i) self-testing, and

(j) self-confidence gain.

As for their negative learning experiences, again listed from the most to the least frequently mentioned, include:

(a) technical problems

(b) preference for pure face-to-face

(c) lack of computer literacy, and

(d) decreased social relations

Given students' overall evaluation of their hybrid learning experiences, it is obvious that a hybrid mode of instruction is a highly viable mode of delivery and it is less challenging than a pure online format. That a hybrid format appears to be more desirable than a pure online format is understandable given that it combines both face-to-face and online strategies and is, therefore, more capable of accommodating diverse learner characteristics when compared to a pure online format.

Research Question #3: What are students' general impressions of and attitudes to traditional face-to-face instruction in the teaching/learning of English Grammar?

    a. What are the perceived advantages and disadvantages/drawbacks of such a learning environment? Do the advantages outweigh the disadvantages?

    b. Given students' overall evaluation, what is the potential/viability of face-to-face instruction for these students (p. 170)?

Students attending conventional face-to-face classroom instruction highly valued their learning experiences. Reported positive learning experiences (frequency: 152) far outnumbered their negative learning experiences (frequency: 2). Listed from the most to the least frequently mentioned, students' positive learning experiences include:

(a) teacher immediacy

(b) interesting/enjoyable learning experience

(c) quality learning

(d) classroom community

(e) access to direct explanation from the teacher

(f) gain self-confidence to speak English

(g) interactivity

(h) preference for face-to-face, and

(i) equal participation.

The only negative learning experience (frequency: 2) was related to the workload. It is worth noting that more than one-third of these positive learning experiences is attributed to teacher immediacy, which further confirms the contention that, for many students, a teacher is still regarded as playing a central role in their learning. It is not surprising, therefore, that the absence of face-to-face contact with the teacher resulted in negative learning experiences as reported by online students.

Given students' overall evaluation, it is obvious that face-to-face instruction is highly viable as far as the students are concerned. This finding does not come as a surprise given the fact that face-to-face instruction has been the traditional teaching mode. Additionally, some students may hold the belief that quality learning is more likely to be achieved in a conventional face-to-face classroom as reflected by their comments.

Research Question #4: How similar/different are students' responses concerning the benefits and drawbacks of each of the three different modes of instruction: traditional face-to-face, online and hybrid? What themes are commonly shared and what themes are distinctive to a particular mode (p. 195)?

For the sake of convenience, students' responses concerning their learning experiences across the three different modes of instruction, grouped thematically, are summarised in the following table, representing both positive and negative learning experiences:

Table 7. A Summary of Students' Positive and negative learning Experiences

Mode of Instruction	Reported Positive Learning Experiences	Reported Negative Learning Experiences
Online	*Frequency: 101* • fun/interesting learning experience • gaining computer literacy • interactivity • opportunity for self-testing • quality learning • enabling of shy and reluctant students to participate • flexibility • no face-to-face meeting required • socialisation (making friendships) • easy access to course materials • absence of noise	*Frequency: 42* • absence of face-to-face contact • technical problems • lack of computer literacy • lack of teacher's monitoring or supervision • decreased participation overtime • lack of immediate feedback/responses • inadequate facilities (difficult to access a computer) • difficult to tell whether the person on the Net is real • the potential for non-participation
Hybrid	*Frequency: 82* • fun/interesting/comfortable learning experience • gaining computer/internet literacy • quality learning • interactivity • course satisfaction • flexibility • socialisation (making friends) • easy access to course materials • self-testing • self-confidence gain	*Frequency: 8* • technical problems • preference for pure face-to-face • lack of computer literacy • decreased social relations
Face-to-face	*Frequency: 152* • teacher immediacy • interesting/enjoyable learning experience • quality learning • classroom community • access to direct explanation from the teacher • gain self-confidence to speak English	*Frequency: 2* • workload

	• interactivity
	• preference for face-to-face
	• equal participation

As can be seen from the above table, while some positive learning experiences are shared with the other groups, others are distinct to a particular group. Three major themes – fun/interesting learning experience, interactivity, and quality learning – are shared by the three groups. However, there are also positive learning experiences reported only by the online and the hybrid groups. This relates to increased computer literacy, opportunity for self-testing, flexibility/accessibility, socialisation/making friends, and easy access to course materials. Finally, there are also positive learning experiences that are distinctive to a particular group. These include the absence of face-to-face contact and noise, reported by online students; course satisfaction and time efficiency, reported by hybrid students; teacher immediacy, classroom community, access to direct explanation from the teacher, and preference for face-to-face contact, all reported by the face-to-face group.

In terms of negative learning experiences, no similar themes are shared across the three groups. Technical problems and lack of computer literacy are two negative learning experiences reported by both online and hybrid groups.

Research Question #5: How effective is Web-based compared to traditional face-to-face and hybrid instruction in the teaching of English Grammar in the EFL context?

    a. Do students' grammar test scores change as a result of attending one of the three different modes of instructions – Web-based, traditional face-to-face, and hybrid instructions – over the course of the semester? If they do, how do they change?

    b. How does mode of instruction (group) affect students' grammar test scores (p. 208)?

A statistical analysis of paired samples t-test was conducted to test whether or not post-test scores are significantly different from pre-test scores for

each group. The result of this test suggests that significant differences exist in students' pre- and post-test scores for the three groups, in that post-test scores are significantly higher than their corresponding pre-test scores, p (.001) < .05. Pre- and post-test scores, gain scores, results of the paired samples t-test, along with the effect size as indicated by a partial eta squared (η^2) are presented in the following table:

Table 8. Pre- and Post-test Scores along with the paired t-test critical values

Group	Pre-Test	Post-Test	Gain Scores	Paired samples t-test	η^2
1	53.48	69.65	16.17	t (49) = -9.870, p (.001) < .05	0.82
2	48.46	69.50	21.04	t (46) = -15.209, p (.001) < .05	0.91
3	56.22	73.11	16.89	t (54) = −11.458, p (.001) < .05	0.84

As can be seen from the above table, group two achieves the highest gain scores (21.04 points), followed by group three (16.89 points) and group one (16.17 points) respectively. The effects size, as indicated by a partial eta squared (η^2) value, are all large according to Cohen's criteria (Cohen 1988).

A one way between-groups analysis of covariance (ANCOVA) was conducted to examine the effect of mode of instruction (group) on students' grammar test scores. The result suggests that the performance of the three groups in the post-test, after adjusting for pre-existing differences in the pre-test, is not significantly different from one another, F (2,148) = 1.16, p (.318) > .05 (adjusted post-test for group one M = 69.31, group two M = 72.13 and group three M = 71.12. The main effect of group, as indicated by the partial eta squared equals .015. The covariate (pre-test) accounts for 42.3 per cent of the total variance in the post-test. Based on the above analyses, it can now be concluded that, in terms of students' learning outcomes, as indicated by their pre- and post-test scores, the three groups perform equally well regardless of the group. This further corroborates students' comments regarding the quality learning they experienced as reported earlier.

Findings of the present study support those of a previous study by Rivera and Rice (2002) who compared the effectiveness of the three different modes of

instruction for teaching a unit called Management Information Systems. The study reported that while the three groups performed equally well as indicated by their test scores, online format was significantly less satisfied. The study by Rivera and Rice employed a quantitative approach in eliciting students' learning experiences (administration of a Likert scale type questionnaire), but arrived at a very similar conclusion to that reported in the present study employing a qualitative approach. This study also supported findings of previous studies by Abdullat and Terry (2004) investigating a unit called Computer Information Systems, Terry and Lewer (2003) teaching International Economics, and Gutierrez and Russo (2004) teaching Introduction to Business in which case online format was reported to be the least favourable of the three modes, followed by hybrid and face-to-face.

The following section will provide recommendations in light of the findings of the present study.

6.2 Recommendations

Three different, but inter-related, recommendations will be provided below: recommendations for practice, recommendation for future studies, and recommendations for policy makers.

6.2.1 Recommendations for Practice

The present study suggests that while some online students could thrive in an online environment, others made it very clear that they would prefer face-to-face contact with the teacher instead. Therefore, it is recommended that students' preferences with regard to mode of instruction be identified prior to implementing an online method simply because this decision will have a crucial impact on their learning experiences. More importantly, students should not be left unguided when making a decision concerning the delivery format they would like to attend simply because, as previous studies have suggested, students generally select an online format simply because it is more flexible than conventional face-to-face classroom instruction without realising what exactly is expected of them in such an environment. Familiarising how online learning works, as well as clarifying what is expected of the students in such a learning environment from the very

beginning, is critical, for it may help students make the right decisions in terms of selecting the delivery format. This will, in turn, avoid unnecessary hassle for both the students and the teacher.

Additionally, it is also recommended that an orientation program be provided for students intending to take online units. As mentioned previously, due to the ubiquity of computers these days, it is often assumed that all students in the classroom already have good computer skills. In fact, this is not always the case. Students' computer literacy should be carefully checked prior to implementing an online learning program to ensure that they will be able to function effectively in an online environment. Orientation programs should also include various online introduction tasks and activities so that students fully understand what is expected of them and also allow them to change their mind if they want to before the commencement of an online program. This process ensures that only those who truly believe that they can work in this environment will select this delivery format. Last, but not least, orientation programs should also include a comprehensive introduction to the Website along with the available communication tools. Students should be given ample opportunities to practice and experiment using these tools themselves during the orientation.

Furthermore, it is also recommended that the reliability and accessibility of the technology (including, but not limited to, hardware and software issues and Internet connections) be carefully checked before the commencement of an online program. A simple technical problem or software incompatibility that could have been easily prevented may prove to be disastrous. The fact that technical problems are the most frequently reported negative learning experiences by online students suggests that the role of technology in engendering students' learning experiences is critical and should, therefore, require particular attention. In fact, as previous studies have suggested, technical problems are classical as far as online learning is concerned. Obviously, unless the technology is reliable in the first place, it is very difficult, if not impossible, to convince students of the merit of an online learning method.

The present study also suggests that an online environment appears to be less intimidating for shy and reluctant students who may find conventional face-

to-face classroom environments limits their participation. Some students find participation in a face-to-face classroom intimidating because they do not want to lose face if they make a mistake. Others may find being the centre of attention when participating in discussion in a conventional classroom unbearable. A hybrid environment is, therefore, recommended as an alternative to conventional face-to-face classroom discussion for students who are normally reluctant, shy, or unwilling to engage during a face-to-face discussion. Providing students with different learning environments that suit their individual characteristics requires more work on the part of the teacher, but such efforts are worth pursuing.

Finally, it is recommended that a bulletin board system that enables students to form groups and post comments to members of the same group rather than to the entire class, be developed so that students can work in a small group and share the results of the small group discussion with the entire class, thus replicating activities in a face-to-face classroom.

6.2.2 Recommendations for Future Studies

Although a hybrid format appears to be a highly viable mode of delivery, such questions as what activities are best conducted face-to-face and what activities are best conducted online remains unknown. It is, therefore, recommended that future research investigate the types of activities that are most suitable for face-to-face and those that are most appropriate for online from the standpoint of the learners. Understanding this issue is crucial if we want to bring together the strengths of face-to-face and online strategies, rather than combining their weaknesses. In this case, use of a hybrid strategy, strictly speaking, does not necessarily combine "the best of both worlds" (Ward 2004; Young 2002) as is commonly implied in the literature; but rather, it is the type of the activities introduced in each format that actually dictates whether it is the strengths or the weaknesses that are to be combined.

Furthermore, the present study suggests that while some students can work comfortably in a wholly online environment, others made it very clear that they would prefer face-to-face contact with the teacher. Therefore, it is recommended that future studies critically examine the characteristics of the students who are

more likely to succeed in online, hybrid, and face-to-face environments and those who are prone to experiencing negative experiences in each of these learning environments. In particular, future research may be geared towards exploring individual characteristics that could reliably predict students' success in any of the above mode of instructions (i.e. which students can work best in online, face-to-face, and hybrid learning environments). Understanding this issue is vital, for it can have significant implications, both theoretically and practically.

Previous studies have shown the importance of students' perception of the learning environment on their learning, learning experiences, and learning outcomes. Therefore, it is recommended that future studies examine students' perception of different modes of instruction both prior to, and after attending a certain delivery format using both qualitative and quantitative approaches. This enables a better understanding of how students' perception of that particular delivery format may actually change over time; which perception may change; in what ways it may change, and which perception remains unchanged.

The present study also suggests that while online students participated quite actively during the first few weeks, this participation declined as the course progressed. A similar finding is also reported by previous studies (e.g. Matusov 2005). It is, therefore, recommended that further research critically address the question regarding factors contributing to a decline in students' participation in online discussion. Understanding these factors is crucial simply because, unless their causes are known, it is not possible to address the problem. Maintaining students' participation is particularly important because, as the present study suggests, a decrease in students' participation in online discussion has a detrimental effect on students' motivation and evaluation of online learning as a whole.

It is also recommended that research examining the effectiveness of technology in learning be conducted with as many subjects as possible simply because each subject has unique characteristics that may require different approaches to both teaching and learning. While technology may just be as effective as conventional classroom instruction for teaching a certain subject, it may not necessarily be the case for teaching others. In this case, priority should be

given to subjects that have so far received relatively little or no attention at all. Additionally, a follow up study could analyse teacher-student and student-student online interaction with a view towards improving it.

Finally, it is recommended that future research employ a true experimental design. One of the strengths of this type of research is that the results are more generalisable than research employing a non-experimental design. With a true experimental design, threats to internal and external validity can be controlled as much as possible. In this case, use of both qualitative and quantitative approaches would be particularly fruitful.

6.2.3 Recommendations for Policy Makers

The present study clearly shows that new technologies have a great potential in foreign language classrooms, particularly as far as EFL classroom is concerned. These findings confirm the findings of previous studies conducted elsewhere exploring the potential of new technologies as a delivery mechanism for teaching various units. Overall, findings of these studies point to the fact that, if carefully planned, technology-enhanced teaching technique could offer various advantages that could benefit students, teachers, and institutions as a whole. It is, therefore, recommended that educational institutions, especially higher education, consider investing in these technologies. Whereas the provision of computers along with necessary technology would undeniably costly, such investment is worth pursuing. However, the provision of the technology should also be followed by regular training programs for teachers, students, and staff.

6.3 Limitations of the Study

Limitations of the present study can be divided into two categories: limitation in terms of the study design and limitation in terms of the technology employed.

6.3.1 Limitation in terms of the Study Design

Several limitations of the present study, which may limit the generalisability of its findings to other contexts and student populations, will be noted here. Firstly, the present study is drawn from intact groups, rather than from randomised

participants, where possible threats to internal and external validity have not been strictly controlled (Hatch & Lazaraton 1991). Therefore, results of the present study must be interpreted with care, particularly when applied to different contexts and student populations. Secondly, the researcher himself was involved in the instructional design (including Web-design) and teaching of the unit. This may produce the so-called 'Pygmalion effect', defined as "the likelihood that a teacher's expectations of a pupil's performance will shape the pupil's behaviour to concide with the teacher's expectations" (Maclachlan 1993 p. 167). However, the researcher himself did not have a position at the beginning concerning the effectiveness of an online method relative to face-to-face classroom instruction in the hope that this would reduce potential bias in both the teaching and its evaluation.

6.3.2 Limitation in terms of the Technology

As far as the technology is concerned, the present study did not employ a standard platform commonly used for online learning such as Blackboard and WebCT which has richer communication tools and better data management system. However, although designed by the researcher, the Website used in the present study is equipped with both synchronous and asynchronous communication which enables the students to interact with one another in their learning.

Another limitation concerns the fact that it was not possible for the students to post comments to a small group during the bulletin board discussion. As a result, comments were posted to the entire class. It would have been better if the system had enabled the students to form small groups and post comments to members of the same group and, at the same time, to the entire class. Due to this limitation, it was not possible to conduct small group discussion in the forums, although students could actually work in pairs using chatrooms. However, again, one limitation of forums was that students' discussion could not be saved automatically by the system. As a result, much of the discussion in chatrooms could not be monitored by the instructor (except when the instructor was also online at the time of the discussion).

6.4 Chapter Summary

This chapter provides conclusions from the findings of the present study in light of the research objectives and research questions stated in Chapter Three. It also makes recommendations and notes the limitations of the present study. It concludes, based on the findings from the quantitative data, that the three different modes of delivery – face-to-face, online, and hybrid instruction – are equally effective in terms of students' learning outcomes. This is indicated by the fact that the difference in students' post-test scores across the three groups, after controlling for pre-existing differences in the pre-test, was statistically insignificant. However, qualitative data indicates that a pure online format is more challenging than the other formats as indicated by the fact that online students reported more negative learning experiences, both in terms of their frequency and their types, than the other two groups. Despite this, all groups reported that they all experienced fun/interesting learning experiences, dynamic interaction, and quality learning.

This section concludes that a hybrid strategy, combining both online and face-to-face strategies, appears to be more desirable than a pure online format as relatively fewer negative learning experiences were reported by students in the hybrid group and higher gain scores were achieved by the hybrid group. A hybrid method is more preferable than a pure online format simply because it appears to be more capable of accommodating different characteristics of the learners. For example, for some students, face-to-face contact with the teacher cannot be replaced wholly by the technology. With a hybrid format, students who prefer face-to-face contact with the teacher can benefit from a face-to-face session, whereas those who prefer independence and flexibility can take advantage of the online session. Institutions seeking to integrate technology into their curriculum may, therefore, consider introducing a hybrid strategy, for it is less stressful for everybody than a pure online format, although in terms of the learning outcomes students may just perform equally well.

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Appendix

Appendix 1: SPSS output for test reliability (split-half model)

Reliability Statistics

Cronbach's Alpha	Part 1	Value	1.000
		N of Items	1[a]
	Part 2	Value	1.000
		N of Items	1[b]
	Total N of Items		2
Correlation Between Forms			.828
Spearman-Brown Coefficient	Equal Length		.906
	Unequal Length		.906
Guttman Split-Half Coefficient			.906

a. The items are: Even

b. The items are: Odd

Appendix 2: SPSS output for tests of normality (pre- and post-test Grp1)

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
PRTGroup1	.082	50	.200[*]	.969	50	.201
PSTGroup1	.098	50	.200[*]	.977	50	.444

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

Note:

Since the significance value of the Kolmogorov-Smirnov test is > .05 (in this case .200 for both test scores), it can now be concluded that the t-test assumption of normal distribution has not been violated. Other assumptions, such as *interval data* (in this case 1-100) and *independence* (the scores of one participant do not affect and are not affected by those of others), are self-evident.

Appendix 3: SPSS output for tests of normality (pre- and post-test Grp2)

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
PRTGroup2	.088	47	.200[*]	.986	47	.842
PSTGroup2	.090	47	.200[*]	.985	47	.813

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

Note:

Since the significance value of the Kolmogorov-Smirnov test is > .05 (in this case .200 for both test scores), it can now be concluded that the t-test assumption of normal distribution has not been violated. Other assumptions, such as *interval data* (in this case 1-100) and *independence* (the scores of one participant do not affect and are not affected by those of others), are self-evident.

Appendix 4: SPSS output for tests of normality (pre- and post-test Grp3)

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
PRTGroup3	.090	55	.200[*]	.955	55	.038
PSTGroup3	.104	55	.200[*]	.965	55	.111

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

Note:

Since the significance value of the Kolmogorov-Smirnov test is > .05 (in this case .200 for both test scores), it can now be concluded that the t-test assumption of normal distribution has not been violated. Other assumptions, such as *interval data* (in this case 1-100) and *independence* (the scores of one participant do not affect and are not affected by those of others), are self-evident.

Appendix 5: SPSS output for paired samples t-test (pre- and post-test Grp1)

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PRTGroup1	53.4838	50	14.29822	2.02207
	PSTGroup1	69.6452	50	14.35920	2.03070

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	PRTGroup1 & PSTGroup1	50	.674	.000

Paired Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	PRTGroup1 - PSTGroup1	-1.616E1	11.57787	1.63736	-19.45179	-12.87101	-9.870	49	.000

Calculating effect size (Field, 2005 p. 294):

$$r = \sqrt{\frac{t^2}{t^2 + df}}$$

$$r = \sqrt{\frac{-9.870^2}{-9.870^2 + 49}}$$

$$r = \sqrt{\frac{97.42}{146.42}}$$

$r = 0.82$

Appendix 6: SPSS output for paired samples t-test (pre- and post-test Grp2)

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PRTGroup2	48.4560	47	14.12419	2.06022
	PSTGroup2	69.4915	47	11.88503	1.73361

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	PRTGroup2 & PSTGroup2	47	.747	.000

Paired Samples Test

| | | Paired Differences | | | | | | | |
| | | | | | 95% Confidence Interval of the Difference | | | | |
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	PRTGroup2 - PSTGroup2	-2.103E1	9.48217	1.38312	-23.81960	-18.25146	-15.209	46	.000

Effect size:

$$r = \sqrt{\frac{t^2}{t^2 + df}}$$

$$r = \sqrt{\frac{-15.209^2}{-15.209^2 + 46}}$$

$$r = \sqrt{\frac{231.31}{277.31}}$$

$r = 0.91$

Appendix 7: SPSS output for paired samples t-test (pre- and post-test Grp3)

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PRTGroup3	56.2173	55	11.69784	1.57734
	PSTGroup3	73.1089	55	10.04397	1.35433

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	PRTGroup3 & PSTGroup3	55	.503	.000

Paired Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	PRTGroup3 - PSTGroup3	-1.689E1	10.93302	1.47421	-19.84725	-13.93603	-11.458	54	.000

Effect size:

$$r = \sqrt{\frac{t^2}{t^2 + df}}$$

$$r = \sqrt{\frac{-11.458^2}{-11.458^2 + 54}}$$

$$r = \sqrt{\frac{131.3}{185.3}}$$

$r = 0.84$

Appendix 8: SPSS output for tests of normality for all groups in both tests

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
PreTest	.050	152	.200[*]	.992	152	.594
PostTest	.071	152	.059	.986	152	.145

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

Note:

Since the significance value of the Kolmogorov-Smirnov test is > .05 (in this case .200 for Pre-Test and .059 for Post-Test), it can now be concluded that the ANCOVA (analysis of covariance) assumption of normal distribution has not been violated. Other assumptions, such as *interval data* (in this case 1-100) and *independence* (the scores of one participant do not affect and are not affected by those of others), are self-evident.

Appendix 9: SPSS output for test of homogeneity of regression slopes

Tests of Between-Subjects Effects

Dependent Variable:PostTest

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	10028.696[a]	5	2005.739	23.503	.000
Intercept	14311.196	1	14311.196	167.696	.000
Group	315.174	2	157.587	1.847	.161
PreTest	8767.293	1	8767.293	102.733	.000
Group * PreTest	273.272	2	136.636	1.601	.205
Error	12459.688	146	85.340		
Total	785507.459	152			
Corrected Total	22488.384	151			

a. R Squared = .446 (Adjusted R Squared = .427)

Note:

Group*Pre-Test has a significance value of .205 (which is larger than .05); therefore, it can now be concluded that the ANCOVA assumption of homogeneity of regression slopes has not been violated.

Appendix 10: SPSS output for tests of homogeneity of variance

Levene's Test of Equality of Error Variances[a]

Dependent Variable:PostTest

F	df1	df2	Sig.
2.855	2	149	.061

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + PreTest + Group

Note:

The significance value of Lavene's Test of homogeneity of variance is .061 (which is slightly above the critical value of .05); therefore, it can now be concluded that the ANCOVA assumption of homogeneity of variance has not been violated.

Appendix 11: SPSS output for tests of linearity between DV and covariate
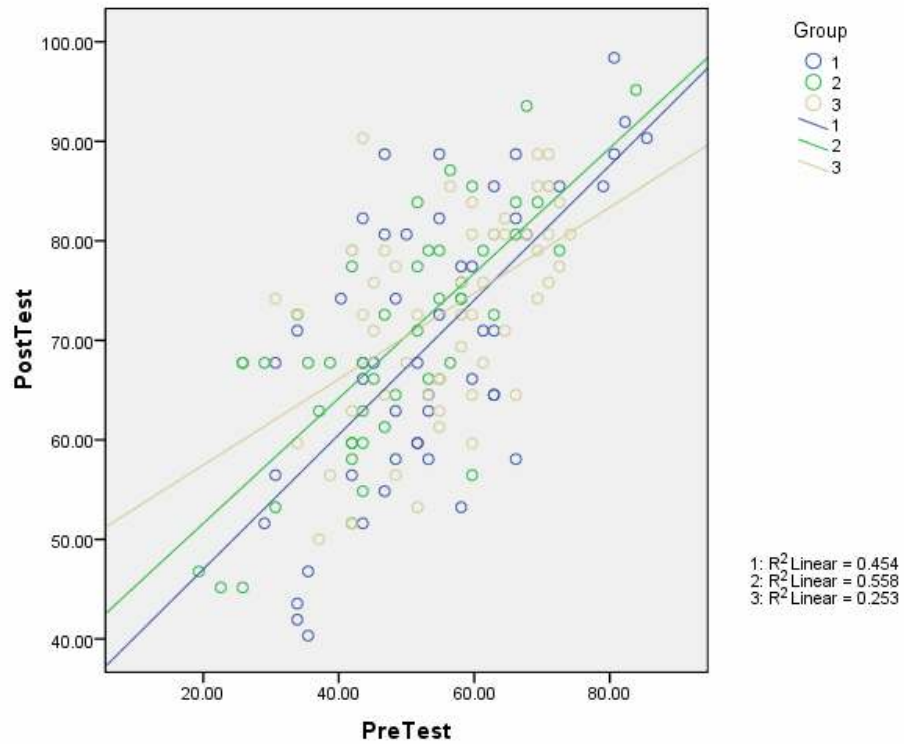
Note:

The three lines are pointing in the same direction as far as the X,Y axis are concerned. This suggests that the ANCOVA assumption of linearity between covariate (pre-test) and independent variable (post-test) has not been violated.

Appendix 12: SPSS output for the results of ANCOVA

Tests of Between-Subjects Effects

Dependent Variable:PostTest

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	9755.425[a]	3	3251.808	37.797	.000	.434
Intercept	14065.532	1	14065.532	163.489	.000	.525
PreTest	9315.460	1	9315.460	108.277	.000	.423
Group	198.684	2	99.342	1.155	.318	.015
Error	12732.959	148	86.034			
Total	785507.459	152				
Corrected Total	22488.384	151				

a. R Squared = .434 (Adjusted R Squared = .422)

Note:

The main effect of group (.318 > .05) is not significant. Covariate (pre-test) is significantly related to the dependant variable (post-test). It accounts for 42.3% of the total variance in the post-test.

Appendix 13: SPSS output for adjusted means

Group

Dependent Variable:PostTest

Grou p	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1	69.310[a]	1.312	66.717	71.903
2	72.133[a]	1.377	69.413	74.853
3	71.156[a]	1.265	68.657	73.655

a. Covariates appearing in the model are evaluated at the following values: PreTest = 52.9182.

Note:

These are new post-test means scores after keeping pre-test scores constant. In this case, the hybrid group achieved the highest mean scores (72.133) followed by face-to-face (71.156) and the online groups (69.310). However, as discussed previously, this difference in means scores is not statistically significant.

Appendix 14: Distribution of Students' Test Scores for Group 1

No.	Pre-Test	Post Test
1.	59.68	77.42
2.	58.06	77.42
3.	53.23	58.06
4.	46.77	80.65
5.	555.0	67.74
6.	30.65	56.45
7.	62.9	70.97
8.	43.55	82.26
9.	50.0	80.65
10.	51.61	59.68
11.	80.65	88.71
12.	66.13	58.06
13.	62.9	64.52
14.	46.77	54.84
15.	79.03	85.48
16.	35.48	555.0
17.	48.39	74.19
18.	51.61	59.68
19.	66.13	88.71
20.	43.55	67.74
21.	58.06	53.23
22.	40.32	74.19
23.	53.23	64.52
24.	30.65	67.74
25.	555.0*	74.19
26.	41.94	56.45
27.	48.39	62.9
28.	54.84	88.71
29.	54.84	82.26
30.	53.23	62.9

31.	80.65	98.39
32.	29.03	51.61
33.	43.55	66.13
34.	82.26	91.94
35.	67.74	80.65
36.	51.61	67.74
37.	59.68	66.13
38.	45.16	67.74
39.	62.9	64.52
40.	555.0*	40.32
41.	72.58	85.48
42.	66.13	82.26
43.	85.48	90.32
44.	555.0*	48.39
45.	33.87	70.97
46.	61.29	70.97
47.	35.48	46.77
48.	35.48	40.32
49.	33.87	43.55
50.	46.77	88.71
51.	555.0*	67.74
52.	48.39	58.06
53.	33.87	41.94
54.	555.0*	59.68
55.	54.84	72.58
56.	555.0*	51.61
57.	43.55	51.61
58	62.9	85.48

* These are missing values codes entered to SPSS

Scores are calculated using the following formula (total correct answer/total items x 100).

Appendix 15: Distribution of Students' Test Scores for Group 2

No.	Pre-Test	Post Test
1.	56.45	87.1
2.	22.58	45.16
3.	51.61	83.87
4.	35.48	67.74
5.	45.16	66.13
6.	43.55	62.9
7.	41.94	77.42
8.	43.55	59.68
9.	43.55	54.84
10.	51.61	77.42
11.	72.58	79.03
12.	69.35	83.87
13.	25.81	67.74
14.	43.55	67.74
15.	67.74	93.55
16.	56.45	67.74
17.	555.0	58.06
18.	19.35	46.77
19.	66.13	83.87
20.	41.94	59.68
21.	66.13	80.65
22.	46.77	72.58
23.	25.81	67.74
24.	555.0	50.0
25.	30.65	53.23
26.	41.94	58.06
27.	555.0	67.74
28.	25.81	45.16
29.	33.87	72.58
30.	29.03	67.74

31.	61.29	79.03
32.	54.84	66.13
33.	38.71	67.74
34.	58.06	74.19
35.	555.0	62.9
36.	59.68	85.48
37.	41.94	59.68
38.	53.23	79.03
39.	58.06	74.19
40.	54.84	79.03
41.	46.77	61.29
42.	62.9	72.58
43.	54.84	74.19
44.	83.87	95.16
45.	59.68	56.45
46.	48.39	64.52
47.	53.23	66.13
48.	37.1	62.9
49.	58.06	75.81
50.	51.61	70.97
51.	41.94	51.61

Appendix 16: Distribution of Students' Test Scores for Group 3

No.	Pre-Test	Post Test
1.	64.52	80.65
2.	66.13	64.52
3.	48.39	77.42
4.	70.97	80.65
5.	74.19	80.65
6.	69.35	85.48
7.	70.97	75.81
8.	58.06	69.35
9.	64.52	70.97
10.	59.68	83.87
11.	555.0	85.48
12.	72.58	77.42
13.	62.9	80.65
14.	38.71	56.45
15.	41.94	79.03
16.	48.39	56.45
17.	67.74	80.65
18.	46.77	64.52
19.	69.35	74.19
20.	69.35	79.03
21.	41.94	62.9
22.	70.97	85.48
23.	33.87	59.68
24.	41.94	51.61
25.	33.87	72.58
26.	62.9	80.65
27.	41.94	79.03
28.	61.29	67.74
29.	43.55	90.32
30.	56.45	85.48

31.	46.77	79.03
32.	54.84	61.29
33.	54.84	66.13
34.	50.0	67.74
35.	64.52	82.26
36.	59.68	59.68
37.	58.06	72.58
38.	43.55	72.58
39.	69.35	88.71
40.	59.68	80.65
41.	51.61	72.58
42.	45.16	70.97
43.	59.68	64.52
44.	54.84	62.9
45.	53.23	64.52
46.	58.06	75.81
47.	30.65	74.19
48.	45.16	75.81
49.	61.29	75.81
50.	72.58	83.87
51.	70.97	88.71
52.	54.84	66.13
53.	51.61	53.23
54.	37.1	50.0
55.	70.97	85.48
56.	59.68	72.58

Appendix 17: The Grammar Test developed and used for the present study

Choose the one alternative that best completes the statement or answers the question

1. Most people .... breakfast before going to work.
   a. having
   b. have
   c. are having
   d. had
2. I .... the work by Monday next week.
   a. will be finish
   b. finish.
   c. will finishing
   d. will have finished
3. Please be quiet! The baby................
   a. sleep
   b. sleeping
   c. is sleeping
   d. is sleep
4. A baby .... a lot of milk everyday.
   a. drink
   b. is drinking
   c. drinks
   d. has drank
5. Rudi .... in Australia from 1994 to 1999.
   a. working
   b. is working
   c. has worked
   d. worked
6. The sun .... in the west.
   a. sets
   b. is setting
   c. set
   d. has set
7. I .... a novel when Jane came.
   a. have read
   b. was reading
   c. read
   d. was read
8. The Earth .... round the Sun
   a. go
   b. is going
   c. goes
   d. went
9. I .... the document last night.
   a. am reading
   b. read
   c. readed
   d. was read

10. Look! The boys...............
    a. are fighting
    b. have fought
    c. fighting
    d. are fight
11. My sister cut her finger when she .... tomatoes.
    a. was chopping
    b. chopped
    c. is chooping
    d. choops
12. I .... Alberth for more than 2 years.
    a. know
    b. have known
    c. have knowing
    d. known
13. Fiona .... a letter at the moment.
    a. has written
    b. writes
    c. is write
    d. is writing
14. 'What .... at 7.30 last night?' 'I was doing my homework.'
    a. was you doing
    b. were you doing
    c. were you do
    d. you were doing
15. I .... my leg. Can you help me call the doctor?
    a. break
    b. have broken
    c. am breaking
    d. broke
16. Utut Adianto is a very good chess player. He .... since he was seven.
    a. has been playing
    b. has played
    c. played
    d. playing
17. My brother .... for nine hours last night.
    a. sleeped
    b. sleep
    c. slept
    d. sleeping

18. Listen! Our neighbour .... a guitar.
    a. has played
    b. is plays
    c. is playing
    d. playing
19. Scientists have long discovered that water............. at 100C.
    a. has boiled
    b. is boiling
    c. boiled
    d. boils

20. She started learning English in June. She is still learning English now. She .... since June.
    a. has learned
    b. learned
    c. has been learning
    d. learns
21. My family had dinner at 7.00 p.m and finished at 7.30 p.m last night. I got home at 7.45 p.m. My family .... dinner.
    a. had
    b. have
    c. had just had
    d. have had
22. Our plane .... on time this morning.
    a. did not arrive
    b. did not arrived
    c. not arrived
    d. not arrives
23. 'Does your father know that you are arrested?' 'Yes, I .... him'.
    a. phone
    b. phoning
    c. have phoned
    d. have phone
24. While she was cooking, her brothers .... TV.
    a. watched
    b. are watching
    c. watching
    d. were watching
25. When I phoned Diana last night, she .... to bed.
    a. had gone
    b. goes
    c. went
    d. has gone
26. My clothes are very dirty. I .... the house.
    a. have been painting
    b. paint
    c. have paint
    d. have been painted
27. The boys .... for half an hour when their parents arrived.
    a. have fighting
    b. have fought
    c. have been fighting
    d. had been fighting
28. Barry .... for 20 years before he resigned from his job last year.
    a. has been teaching
    b. had been teaching
    c. has taught
    d. had taught
29. They began to play chess two hours ago and they are still playing. They .... for two hours.
    a. play
    b. are playing
    c. playing

      d. have been playing

30. When I phoned her last week, I found that she .... to Sydney.
      a. went
      b. going
      c. has gone
      d. had gone

31. When you visit me next month, I .... you to the zoo.
      a. take
      b. will take
      c. took
      d. am take

32. Don .... in Kendari for two years before he left for Canada.
      a. had been working
      b. have worked
      c. worked
      d. have been work

33. She .... her assignment when you come to her place tonight.
      a. will be doing
      b. does
      c. will doing
      d. doing

34. I .... you a house when I have enough money.
      a. bought
      b. buy
      c. am buying
      d. will buy

35. Please don't come to my place between 7.30 and 9.00 am tomorrow because I .... tennis then.
      a. will play
      b. playing
      c. will playing
      d. will be playing

36. The class begins at 7.00 am and ends at 8.30 am. At 9.00 am, the class ....
      a. finished
      b. finishes
      c. will finished
      d. will have finished

37. Alberth .... spend his holiday in Canada next year.
      a. going
      b. is going
      c. is going to
      d. going to

38. Anton is a farmer and he works in his paddy field between 9.00 am and 11. am every day. At 10.00 am tomorrow, Anton .... as usual.
      a. works
      b. will work
      c. working
      d. will be working

39. She .... her homework by Wednesday next week.
      a. have finished
      b. will finish
      c. finishes

     d.   will have finished

40. She .... for three hours by the time I call her.
     a.   will have been studying
     b.   will be studying
     c.   will study
     d.   will be study

41. Bob .... his English by the time he comes back from Australia.
     a.   improves
     b.   already improved
     c.   has improved
     d.   will have improved

42. How many nouns are there in the following sentence: ***The district consists of a small town and smaller villages where the economy is based mainly on agriculture and fishing**?
     a.   7
     b.   6
     c.   4
     d.   5

43. Bobby runs very..........
     a.   fast
     b.   fastly
     c.   faster
     d.   fastest

44. How many nouns are there in the following sentence: **John is one of the brightest students in his class.**
     a.   1
     b.   2
     c.   3
     d.   4

45. What is the adjective in: ***There was concern that if this situation continued, conflict in Buton would be unavoidable**?
     a.   continued
     b.   conflict
     c.   situation
     d.   unavoidable

46. Which is <u>not</u> a noun?
     a.   purple
     b.   sheep
     c.   goat
     d.   Australia

47. The students are now working .... to solve the problem.
     a.   dilligent
     b.   dilligently
     c.   dilligentness
     d.   dilligency

48. I think 'English Syntax' is the .... subject.
     a.   most interested
     b.   most interesting
     c.   most excitement
     d.   none of the above

49. She invited you to the party .... she could introduce you to Brandon.
     a.   so that

  b. as long as
  c. while
  d. until

50. What is the adjective in: ***While education in Indonesia has made important strides over the years, access to education and teaching methodology are often cited as areas in need of further improvement**?
  a. strides
  b. cited
  c. improvement
  d. important

51. The new manager is friendly, sociable, ... tolerant.
  a. or
  b. and
  c. because
  d. yet

52. They will be leaving .... about ten minutes.
  a. in
  b. on
  c. at
  d. by

53. I tried to call you, ... you did not pick up the phone.
  a. or
  b. but
  c. and
  d. so

54. He usually travels to Jakarta .... train.
  a. by
  b. on
  c. with
  d. in

55. Graham called Susan the day before yesterday, but .... was not at home.
  a. her
  b. she
  c. he
  d. hers

56. 'Where is Peter?' 'He is .... the phone right now'.
  a. in
  b. at
  c. on
  d. by

57. 'Graham, is this your jacket?' 'Yes, it's ....'
  a. mine
  b. my
  c. mine jacket
  d. yours

58. I have .... very good friend in Canada.
  a. a
  b. the
  c. an
  d. no article is needed

59. Below are the plural forms of a verb, except:

      a. are
      b. were
      c. am
      d. do

60. Neither Rudy nor .... am responsible for her death.
      a. I
      b. me
      c. my
      d. mine

61. Find the main verb in: ***At the same time, the project's goals included greater implementation of student-centred education in hopes of improving education for all the children in the schools involved**.
      a. involved
      b. included
      c. improving
      d. implementation

62. This is .... best car I have ever had.
      a. a
      b. the
      c. an
      d. no article is needed

Good Luck!

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