Dialogic classroom discourse analysis of discipline-specific EAP classroom in a Hong Kong university

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Abstract

The integral nature of classroom interaction to students' learning and development has long been recognised with its significance in shaping learning experiences and promoting learner engagement (Hardman J 2016; Alexander 2018; Barnes 2010; Wells 1985; McCreedy & Simich-Dudgeon, 1990) in addition to fostering the development of communication skills and competencies in thinking (Mercer 2000). Yet, despite the quantity of teacher-student interaction research in a variety of EFL contexts (Chappel, 2014; Seedhouse, 2004; Walsh, 2006) as well as university settings (Hermann 2013; Boyle 2010; De Klerk 1995, 1997; Woodward-Kron & Remedios 2007) with some researchers beginning to explore EAP contexts (Dippold 2014; Ahmadi 2017; Heron & Webster 2018), an understanding of the EAP teachers' use of classroom interaction strategies in discipline-specific EAP learning contexts is yet to emerge. Therefore, this study aims to study classroom interactions in such contexts with a view to offering a perspective on the manifestation of EAP teacher classroom behaviour in lessons aiming to address a specific way of communicating in a given academic discipline.

Three teacher participants involved in the teaching of discipline-specific EAP classes targeting different disciplines (Computer Science, Architecture and Modern Languages and Cultures) were recruited for lesson observations of one of their regular two-hour EAP lessons or two of their regular one-hour EAP lessons, depending on module schedules and course structure. The lessons were coded for discipline specificity in terms of addressing content and language pertaining to specific communicative needs. This was then followed by stimulated recall interviews in which teachers were shown audio-recorded episodes of their own teaching to understand the decisions and rationales underlying their own use of questioning and feedback strategies as well as student responses.

The study finds that teachers used more open than closed questions, generating more extensive student responses than those found in previous studies (e.g., Hardman J 2016). In terms of feedback strategies, teachers made more persistent use of feedback strategies to elicit more extended and elaborated responses, although a lack of attempt to open up the classroom by inviting students' comments on others' input was also observed. It is suggested that opportunities for professional development and intervention studies be carried out to further efforts to develop what Walsh (2007, 2011) terms teachers' classroom interactional competence.

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Chapter 1: Introduction

1.1 Context of the study

As the official instructional medium of higher education in Hong Kong, English continues to be attached great importance in tertiary learning and teaching. All eight publicly funded universities in the territory offer undergraduate English enhancement courses that address communicative needs arising from undergraduate curriculums funded centrally by the government under the University Grants Committee. This is supported by major funding initiatives such as the 2016-19 triennium Teaching Development and Language Enhancement Grant (TDLEG) of HKD $562.8 million alongside other recurrent funding schemes (Hong Kong Legislative Council 2014). All undergraduate students enrolled in public universities, whether local or international, undertake academic English training in the form of a minimum of one English for Academic Purposes (EAP) module, although the degree to which its content is specifically matched with that of students' major area of study may vary.

Having taught EAP for six years at a multi-disciplinary institution in Hong Kong, the exposure to as many as seven modules targeting different academic disciplines has meant much professional growth. Featuring an in-sessional English-in-the-discipline (ED) programme that seeks to cater to the specific yet varied communicative demands presented by their own discipline (Hyland 2015), however, I have had to tackle a wide range of learner needs. The challenges of EAP teaching, such as the inadequate grasp of content knowledge and familiarity with materials (Post 2010; Alexander 2007), therefore, all resonate strongly with my own personal experience as a discipline-specific EAP teacher. Apparently, it would be unthinkable of an EAP teacher to walk into a classroom with little or no knowledge of the target discipline. Yet, the majority of EAP teachers, including myself, have begun their EAP teaching career with general English language teaching (ELT) qualifications given the rarity of pre-service training opportunities (Campion 2016).

Recently, having assumed the deputy coordinatorship of the Dentistry EAP programme, I have been assigned new responsibilities such as revising assessment rubrics and schemes and developing new module components. None of these, however, has presented as much challenge as teaching first year dental/medical

terminology workshops. Despite overwhelmingly positive student reviews, most comments point only to the "interactive" and "competitive" nature of my teaching with lessons featuring a range of "fun games". In most sessions, I found myself trying to cover prescribed content with the use of a mixture of gaming techniques. I was not comfortable enough to reveal that I was also a learner of medical language whose expertise in fact lies in analysing word roots, prefixes and suffixes and modelling the use of lexical patterns in learning new vocabulary items. This lack of confidence was evident in my constant efforts to convince my students of my pedagogical competence by asking closed questions that would help me avoid revealing my very limited knowledge of medical terms, rather than inviting them to think about and share their specialist knowledge as dentists-to-be. In short, the under-utilisation of interactional techniques to elicit learners' prior or expert knowledge meant that the learning atmosphere positioned me as an "expert in passing for an expert". This experience had since led me to reflect on my own interactional approaches and propelled my interest in exploring classroom communication in EAP lessons. In particular, I began to question my own assumption of an EAP teacher's pedagogical competence in a discipline-specific instructional context.

1.2 Background theory and research

A classroom ceases to be a site for learning and teaching where its participants disengage from interaction. Indeed, of growing interest to researchers in applied linguistics and language teaching is the way teaching and learning is mediated and achieved through the interactive dynamics of the classroom. It is this kind of dynamics that is said to be essential for effective language pedagogy. The area of research now recognised as "classroom discourse analysis" or "classroom interaction research" is grounded in social constructivist theories of learning developed by Lev Vygotsky, whose renowned idea of the *"zone of proximal development"* (ZDP) has been influential in informing the way educators perceive and understand the nature of learning. Predicated upon the notion that learning should be congruent with a child's state of development, the oft-cited theory posits that knowledge acquisition is contingent upon the learners' prior knowledge and that

learning is optimised "under adult guidance or in collaboration with more capable peers" such as teachers (Vygotsky 1978, p. 86).

The dialogic educationist envisages classroom learning as a collaborative enterprise where teachers do not merely lecture, but invoke students' prior learning and other experiences for instructional purposes. This would involve the use of dialogue that facilitates knowledge building. Yet, classrooms can sometimes be dominated by what Edwards and Westgate (1994) refer to as "unequal communicative rights" where monologue prevails and questions target preconceived answers known to teachers. Dialogic classroom discourse research is indeed concerned with the ways in which knowledge building can be promoted through interactive means. If it is through conversing with teachers and other learning partners that learners acquire ways of using language to represent their thoughts, then a dialogically oriented classroom is an attempt at active construction of meaning through a concerted effort on the part of learners and the teacher to understand each others' perspectives so as to achieve intersubjectivity (Mercer 1995; Wells and Mejia-Arauz 2006).

Recent decades have seen a consistent growth in research interests in dialogic teaching and pedagogy (see, for instance, Chappel 2014; Hardman and Abd-Kadir 2010; Lyle 2008; Nystrand 1997; O'Connor and Michaels 2007; Wells 1999). This view of teaching requires practitioners to recognise the differences between classroom participants in terms of their understanding of subject matter which is nonetheless what would allow them to build mutual understanding and hence, intersubjectivity (Wells and Mejia-Arauz 2006). In fact, dialogue is meaningful only if participants share and negotiate understanding rather than thinking and producing identical thoughts. Where teachers are able to promote interthinking and negotiation through classroom talk, it is assumed the dialogic approach to teaching can result in effective learning and teaching.

1.3 Purpose of the Study

This research aims to explore the dialogue between university EAP teachers and students in relation to the questioning and feedback strategies that practitioners use in the course of their teaching of discipline-specific EAP modules. As such, it

examines the kinds of classroom interaction observed in in-sessional discipline-specific undergraduate EAP classrooms. This is of significant value given the potential of its findings to inform future EAP teacher development effort that can be introduced to assist them in gaining acquaintance with the strategies of effective teaching in a given module oriented towards a content area.

1.4 Definitions of Key Terms

1.4.1 English for academic purposes (EAP)

English for academic purposes (EAP) is defined throughout this paper as the teaching of English that aims to prepare learners for academic study or research (Flowerdew and Peacock 2001). As will be highlighted in the next chapter, a debate relating to the treatment of EAP instruction of specific communicative demands presented by particular academic communities, rather than a more abstract concept of academic register in general, has begun to surface. (Hyland and Hamp-Lyons 2002).

1.4.2 Classroom discourse and classroom interaction

Classroom discourse is used throughout this dissertation to refer to the kind of communication system in the classroom context theorised in Barnes (1975) which has subsequently been built upon. In his book, Barnes (1975) suggests that the totality of the classroom communication consists in "not only how the teacher sets up classroom relationships and discourse but also of how the pupils interpret what the teacher does" (Barnes 1975, p. 33). Classroom discourse, in other words, are the features that reflect how this system of communication is realised through the learning and teaching activities. Such features may include those that Cazden and Beck (2003) have identified, namely "speaking rights and listening responsibilities", "teacher questions", "teacher feedback", "pace and sequence" and "classroom routines".

Classroom interactions, on the other hand, therefore, are the instances where students and teachers participate in questioning, response and feedback events taking place within lessons (Hall and Walsh 2002). Here, the focus is on the linguistic

forms of interaction where language underlies all pedagogical activities where it is language that allows for new knowledge to be acquired and developed, problems of understanding to be identified, breakdowns in communication addressed and relationships maintained and established (Walsh 2011).

1.4.3 Dialogic teaching and pedagogy

Dialogic teaching is an approach of education centred upon the nature of interactivity found in classroom discourse. Not all kinds of classroom discourse will be considered dialogic. Some kinds of talk are relatively more dialogic than others (O' Connor and Michaels 2007). In fact, a dialogic approach to teaching begins with establishing the social roles participants in classroom discourse, i.e., teachers and students, play in the process of knowledge construction (Nystrand 1997).

1.4.4 Questioning and feedback techniques

Following Sinclair and Coulthard's (1975) Initiation-Response-Feedback (IRF) framework, quite a lot of research into questioning strategies has generated imperative insights for researchers and practitioners. Questioning techniques may include open and closed questions while feedback techniques may be realised with the teacher praising or commenting on students' answers, asking for clarification or further elaboration.

1.5 Summary

This chapter has established my key motivations for this study in EAP classroom discourse stemming from my own experience as a practitioner. I have also examined the underlying theory that has informed research in this area, namely the Vygotskian ZPD theory which has been influential in developmental psychology and education. As such, it has highlighted the importance of classroom interaction to learning and teaching as established by scholars in dialogic teaching which values intersubjectivity and co-construction of meaning through classroom talk. This introductory statement, therefore, has underscored the significance of classroom interaction research in contexts where differences in knowledge and expertise necessitate meaningful dialogue, as is the case with EAP teaching. Finally, a few important key terms have been defined.

This dissertation will then move on to a comprehensive review of the relevant literature chapter 2. This will then be followed by chapter 3, which details the context of research, research questions and methodological approaches adopted. Chapter 4 will present the findings and discussion that are significant in terms of the critical currency that has helped to sustain the burgeoning literature in classroom discourse in language classrooms. It will conclude in Chapter 5 with a summary of findings, implications and recommendations.

Chapter 2: Review of Literature

In this chapter, a review of the existing literature on the question of debates over discipline specificity in EAP and practitioner roles, classroom discourse studies as well as various research endeavours examining different contexts of classroom language use. Such will include language teaching contexts and non-language elementary, secondary and university classroom contexts. This will be followed by a review of the key literature on dialogic pedagogy. An understanding of the complexity of these various strands of research will then pave the way for a critical evaluation of the small amount of existing studies in EAP classroom discourse. This will in turn afford an opportunity to situate the present study in the literature in relation to the place of a discipline-specific dialogue in the EAP classroom.

2.1 EAP practice: general vs. discipline specific

As a branch of English language teaching (ELT) concerned with the teaching of English language skills for performing academic tasks, EAP presents itself in a fashion that contrasts markedly with general English (GE) in being heavily driven by situationally conceived learner needs arising from their academic contexts (Charles 2013; Dudley-Evans and St. John 1998; Strevens 1988). EAP can indeed be tailored to many different study contexts such as English-medium elementary and secondary schools, tertiary-level technical institutions and universities. Within EAP, nonetheless, it is also not uncommon to find a tendency towards advocacy of a general approach (GEAP) targeting the more general needs within a perceived tertiary curriculum such as essay writing. The GEAP approach sees academic texts from all disciplines as sharing certain essential features. Even where some rhetorical differences exist, some commentators believe that a range of academic textual features are shared by many fields and the degree to which grammar, functions and discourse structures vary are not such that it would warrant teaching academic English specifically (see, for instance, Bloor and Bloor 1986; Hutchinson and Waters 1987). For these commentators, the development of what Johns (1997) calls "core competencies" such as "explicitness, hedging, correct social relations, genre requirements, signalling" and so forth, which would define academic texts in a broad sense, would be sufficient. In addition, the lack of proficiency means that the teaching English for specific needs requires substantial remedial work at lower levels. Most notably, however, the argument that teachers are said to lack confidence and expert knowledge to handle conventions characterising technical

and context-driven forms of communication performed by subject specialists (Spack 1988).

On the other hand, coming from the genre-based pedagogy tradition, Hyland and Bhatia are more in favour of the treatment of features of language and textual organisation specific to the target academic texts (Bhatia 2002; Hyland 2002, Hyland 2006, Hyland 2016). Whatever students' proficiency levels, learning is always said to be based on what is needed in given communicative circumstances and not some linearly conceived abstract language curriculum that deals only with pure linguistic forms or isolated language features (Hyland 2002). Predicated upon the idea that different academic disciplines come with different conceptions of knowledge and research approaches, Hyland's (2002) notion of discipline specificity posits that "disciplines and professions are largely created and maintained through the distinctive ways that members jointly construct a view of the world through discourses" (Hyland 2002, p. 390). In a similar vein, Bhatia (2002) also holds that the bulk of research on academic discourse at the turn of the century has established the case for significant discoursal variability in relation to genres and academic fields which supports the disciplinary uniqueness proposition. For instance, variations in hedges and boosters realised by epistemic modality markers are now well documented with researchers highlighting that different disciplines have their own specific expectations as to the authors' commitment to the certainty of their assertions (Millan 2008; Vold, 2006).

If the job of EAP practitioners is to prepare learners to engage competently as members of specific discourse communities, then it is pivotal that EAP teachers align their teaching with students' engagement with their disciplines. Increasingly conditioned by the demands brought by discipline-specific communication, learning to negotiate a range of text types and assessment formats becomes the primary agenda. Consequently, as Charles and Pecorari (2016) point out, practitioners are often "positioned between students and subject specialists in the students' field and must negotiate rather complex relationships with them" (p. 9). Indeed, EAP practitioners often find themselves in instructional contexts where they must negotiate with students over a substantial amount of content knowledge pertaining to the disciplines for which they have received little training. Perhaps what should

be further explored here is the responsibility with which the practitioner is vested insofar as the delivery of discipline-specific EAP teaching materials is concerned.

2.2 Classroom discourse in language teaching: IRF vs. dialogic

Research in the use of classroom interaction techniques to promote student engagement features a fascinating history with many studies emphasising the integral role of classroom instruction (Alexander 2008; Barnes 2010; Hardman J. 2016a; McCreedy and Simich-Dudgeon 1990; Mercer 2000; Wells 1985). Below, I shall examine the IRF framework as well as studies in questioning and feedback techniques.

2.2.1 The IRF framework

A perennial pattern of teaching associated with the traditional model of teacher-initiated three-part exchange known as Initiation-Response-Feedback (IRF) as theorised by Sinclair and Coulthard (1975) has attracted criticisms due to the undue constraints it imposes on student participation which hinders their ability to communicate actively in class so as to construct knowledge by negotiating meaning (Cullen 2002; Garton 2012; Heath 1983; Nunan 1987; Nystrand and Gamoran 1991; Thornbury 1996; Walsh 2011; Wood 1992). Nevertheless, it must be stressed that as a theoretical construct, this model has enormous heuristic value as it serves to identify teachers as having the pedagogical responsibility as the facilitator of effective classroom talk by highlighting the strategies to promote effective interaction with students. In fact, as Seedhouse (1996) has noted, the IRF sequence also pervades parent-child discourse and is believed to be a prevalent form of communication in early child language development. The model posits that the teacher performs *initiation* (I) by asking a question with known answers that may involve recalling something previously learned (van Lier 2001), students then produces a short *response* (R) on which teacher then provides *feedback* (F). This can be illustrated as follows:

T: What do we have to do with the verb coming after words like "must", "can", "should"? (I)
S: Do nothing? I think...don't change anything…(R)
T: That's right. We use the most basic form of the word like "play" instead of "plays" or "played". (F)

2.2.2 Teacher questions and student responses

The fairly established tradition of teacher questions research with seminal works such as Long and Sato (1983) and Brock (1986) concern the range of questions teachers ask as part of the "I" move of the IRF framework. It has been established that teachers questions are the most recognisable form of classroom discourse as teachers are always the ones to initiate or sustain interaction by raising questions (Ellis 1993; Lynch 1991; Wilen 1991). Teacher questions are often used to elicit responses that provide an entry point to a discussion that will form the basis of a given instructional sequence in a lesson. They have, nevertheless, been variously classified with a good number of earlier studies pointing to a diverse range of classificatory schemes such as convergent vs. divergent, display (closed) vs. referential (open) and so on (see, Chaudron 1988; Cunningham 1987; Guilford 1956; Long and Sato 1983; Richards and Lockhart 1996), of which the display (closed) and referential (open) distinction has been more frequently utilised. Closed (display) questions are questions prompting brief and unelaborated simple responses targeting answers known to the teacher with the function of testing knowledge learned previously. Marked by low-level cognitive evaluation (Cazden 2001), such factual questions can have the effect of causing monotony and a lack of interactivity in the instructional atmosphere where students are only prompted to say what teachers expect. The over-use of such questions could lead to what may be called a recitation script (Hardman F. 2008). Open (referential) questions, on the other hand, call for exploration, interpretation and judgment typically requiring more extended responses rather than one-or-two correct short answers known to the teacher. Being "genuine information questions", they may be said to have the potential to generate quantifiably longer, more authentic student responses of more significant complexity (Nunan 1987; van Lier 1988). Previous studies have shown a tendency for display or closed questions to dominate classroom interactional patterns in the language classrooms studied (Ellis 2007; Ho 2005; Long and Sato 1983; Nunan 1987; Tsui 1985; Wu 1993; Yang 2010).

2.2.3 Teacher questions and student responses in international classroom studies

A number of studies in the UK primary schooling context have examined the use of questioning techniques in the context of literacy education in primary schooling

contexts. Hardman F., Smith and Wall (2003), for instance, examining the impact of "interactive whole-class teaching" under the UK National Literacy and Numeracy Strategies projects, reported a total of over 50 closed questions, more than five times as many as open questions, asked by the teacher per hour of literacy instruction (or Literacy Hour) in the primary English classroom. With a representative sample of 70 primary Key Stage 1 and Key Stage 2 literacy teachers with classes distributed evenly between years 1 to 6, it was found that teacher-led recitation was the norm with teachers asking mostly questions expecting predictable answers. These results were similar to those found in a subsequent study of the same scale conducted by the same team in special needs (SEN) literacy teaching context (Hardman F. et al. 2005). Another study looking at a total of 72 KS1 and KS2 literacy and numeracy lessons by both the literacy and numeracy project teams (Smith et al. 2004) yielded a similar conclusion that four times as many closed questions were asked compared to open questions. The study also reported an average length of fairly brief pupil response of only five seconds.

To date, classroom interaction studies in the Hong Kong context have examined how teachers use questioning techniques mainly in secondary school EFL classrooms. Pioneering this area of inquiry, Tsui's study (1985) was conducted in both lower and higher proficiency eighth-grade reading comprehension classes. The results point to an overwhelming majority of questions being closed questions (93.5% and 84.8% in lower and higher proficiency classes respectively). Similarly, in Wu (1993)'s study of junior secondary general English and reading comprehension lessons (seventh and eighth grades), closed questions were also more prevalent than open questions, although not by such a significant percentage (71.1% vs. 28.9%) as notable as that in Tsui's study (1985). A less quantitatively oriented small-scale action research study by Chan (1993) of twelfth-grade lessons, despite generating no concrete statistical data, found that the teacher being studied tended to ask more lower-order questions that had the characteristics of closed questions. More recently, studying a variety of English classes of three different levels of academic aptitude (bands 1-3) taught by less experienced pre-service teachers, Yang (2010) found that even in the most proficient class (band 1), only about a third of the questions asked were open (referential) questions with little or no such questions being asked in middle and lower proficiency classes (1.8% and 0% in bands 2 and 3 classes respectively). In none of the lessons in this study did

any response exceed twelve words, signalling the widespread presence of brief responses to teacher questions.

The opposite effect of the use of referential questions, nonetheless, has also been noted in a number of research where students' reluctance and lack of readiness to answer referential questions is noticeable, with students' proficiency being a key predictor of the success of the use of such questions (David 2007; Shomoosi 2004; Tsui 1996). It has also been suggested that teachers should not be the only classroom participants to be asking questions, where students' role of facilitating ongoing discourse is explicitly espoused (Pica et al. 1987). It should also be acknowledged that the way students interpret the teacher's intention in asking a question can influence how they distinguish between closed and open questions and in turn impact on the length and quality of their answers (Banbrook and Skehan 1989).

2.2.4 The Feedback Turn ("F" move) for opening up dialogue

The interactive momentum of the classroom depends not only on questions but feedback from teachers. While this form of feedback or follow-up is neither usual nor mandatory in everyday conversations, it has been seen to occur in classroom teacher-student exchanges (Francis and Hunston 1992; Jones 2009, Willis 1992). There are a number of ways in which teachers can provide feedback on student responses to their questions. "Recasts", which refer to the effort to immediately reformulate learner response based on error found in the response move (Ammar and Spada 2006), for instance, are of the most common type of feedback used in a variety of EFL settings from elementary to tertiary level classrooms, as quite a considerable number of studies have found (Doughty 1994; Ellis et al. 2001; Lyster 1998; Lyster and Ranta 1997; Mori 2002; Panova and Lyster 2002; Roberts 1995; Tsang 2004).

In classrooms where there is less of a focus on language form such as the EAP classes in this study, however, some feedback strategies with more relevant functions have been proposed even by those researching EFL contexts. Some of these functions are commentary, acceptance and evaluation (Sinclair and Coulthard 1975; Sinclair and Coulthard 1992). In Cullen's study (2002), the evaluative function

of teacher feedback on student responses is examined at some length, specifically, the appropriateness or acceptability of students' contributions. Walsh (2006) argues, in fact, that the extensive use of evaluative feedback is legitimate and generative of learning opportunities. Teachers who are capable of taking advantage of students' response would be adept at using the evaluative move to hint at whether the response is valid or reasonable although excessive use of evaluative feedback discourages student participation (Nassaji and Wells 2000). The literature on dialogic teaching to be reviewed below will offer a further list of evaluative feedback types employed in university classrooms to questions. In response to the criticisms directed at IRF, some studies have recommended a less rigid approach that tackle the constraints of the seemingly restrictive triadic discourse structure of IRF (Cazden 2001; Gibbons 2002; Hall 1997; Jacknick 2011; Macaro et al. 2016; Nassaji and Wells 2000; Nystrand 1997, Nystrand 2006; Nystrand et al. 2003; Wells and Mejia-Arauz 2006). Such research maintains that teacher-student interaction in the language classroom should emphasise quality verbal exchanges which are believed to have the power to increase learning opportunities with substantial student contributions and engagement. The dialogic turn, which advocates the relaxation or partial dissolution of the IRF approach in teaching is a vital step towards reconfiguring the communicative climate in the classroom (Hardman J. 2016a; Walsh 2011), will be discussed in the sub-section below.

2.2.5 The dialogic turn in the classroom

The dialogic approach to classroom interaction developed in Alexander (2008) draws heavily on the sociocultural theory of learning by Vygotsky and Bakhtin's thesis on the dialogicality of language and thinking (Xu 2012). There is not at any given moment a possibility that the meaning of a text remains static and unchanging, argues Bakhtin (1992), and his concept of heteroglossia means that communication is never one-way from text to readers, but interactive. In the classroom, it is not possible that what a teacher says to a student is automatically received in a copy-and-paste fashion without interpretation via the students' own thinking process contingent upon the use of existing knowledge to make sense of new input (see also Lotman 1988). It is indeed the recognition of differences in thinking and perspectives that helps to sustain meaningful and interesting conversations (Wells and Mejia-Arauz 2006). Teachers' active involvement of students is also important

in knowledge co-construction since they have to be able to gain a sound grasp of students' thinking.

The recent growth of the field of dialogic education is reflected in the increasing number of publications that have also led to an upcoming compilation of a handbook of dialogic teaching with contributions from around the globe (Hardman J. 2018). Questioning in the same way as O'Connor and Michaels (2007) asks "when is dialogue dialogic", Alexander (2008) suggests that dialogic teaching replaces the vagueness of "interactive" and the "organisational restrictiveness of whole class teaching" by focusing on the quality, dynamics and content of talk (p. 62). His book indeed establishes the key principles of this revolutionary paradigm of teaching (p. 28):

Collective: addressing learning tasks together whether as a group or as a class, rather than in isolation
Reciprocal: learners and teachers listening to each other, sharing ideas and considering alternative viewpoints.
Supportive: learners articulating understanding and helping each other reach common understandings
Cumulative: learners and teachers building on their own and each other's ideas and chaining them into coherent thinking and inquiry
Purposeful: planning and facilitating dialogic teaching with particular educational goals in mind

Distinguishing six different types of talk, namely transactional, expository, interrogatory, explanatory, expressive and evaluative, Alexander's (2008) informative theoretical guide provides the first step towards in understanding of how authentic conversations may be unravelled with techniques to draw them closer to "talk for everyday life". Nystrand (1997, et al. 2003), however, provides more specific moves that demarcate dialogic and monologic discourses. He also distinguishes authenticity, uptake, evaluative and cognitive levels as measures to assess the degree of dialogicality in any given classroom situation. In any case, dialogic discourse and IRF analyses are not nonetheless mutually exclusive. Dialogic interaction draws on the IRF paradigm to reveal, for example, a question in its

communicative context which has implications for the analysis of its use and impact on the interaction in the classroom.

Building on Alexander (2008) and Michaels and O'Connor (2012), Hardman J. (2016a) indeed recommends that university teachers should loosen discoursal control and strike a more fruitful classroom dialogue with due attention to objectives and goals. Though still based on the IRF paradigm, she suggests that the initiation move can be enriched and "dialogised" by using more authentic and open-ended questions that allow for more than one possible way of responding. An important way is to make productive use of the feedback or follow-up move, which can be expanded when teachers probe and develop further on students' verbal contributions (the techniques and descriptions summarised in Hardman J. (2016a). Techniques of follow-up such as probes and uptake, with the latter being associated with a low usage (Wells and Ball 2008), have been said to be powerful in opening up classroom dialogue for loosening the strict recitational question-and-answer sequence. The key technique of uptake, nevertheless, is rarely taken up with only 5 per hour in the UK National Literacy and Numeracy Strategies study and occured in 4% of the classroom exchanges and a widespread absence in 43% of the teachers' classes (Smith et al 2004).

2.3 Classroom discourse in non-language classroom settings and EAP settings

The literature on interactions in non-EAP university level classroom settings suggest that tutor-dominated interaction appears to characterise university classroom learning where a supportive learning dialogue is not typically maintained (Boyle 2010; De Klerk 1995, De Klerk 1997; Hermann 2013; Woodward-Kron and Remedios 2007). Hardman J. (2016b) suggests, in particular, that tutors tend not to build upon input from students to extend dialogue for critical and higher order thinking and restrict learning opportunities. Her examination of the questioning and feedback techniques in UK university tutorials are insightful in terms of presenting a viable basis upon which to measure interactive dynamics of a variety of university of classrooms. In the university language classroom, teacher-dominated discourse rarely yields positive results in terms of making learning visible and facilitating formative evaluation of learning outcomes (Hardman J. 2016a). A relatively more

positive picture in Walsh and O'Keeffe (2010), however, points to the potential to argue for the case of a more "open and dialogic exploration of disciplinary knowledge (p. 155) but the study fails to provide convincing evidence for the tutor's productive use of students' input to engage in in-depth discussions of content knowledge. There has, therefore, been a call for teachers' development of what Walsh (2006, 2011, 2012) has termed classroom interactional competence (CIC) which he defines as student and teachers' ability to make use of "interaction as a tool for mediating and assisting learning" (Walsh 2006, p. 132).

The explicit alignment of pedagogical goals with teacher talk is key to connecting learning on an EAP module and that of a content area, as Heron and Webster (2018) have argued in one of the recent studies in EAP classroom discourse. Building on Dippold's (2014) pioneering work in EAP classroom studies, Heron and Webster's study (2018) is the first of its kind to problematise the use of classroom talk by experienced EAP practitioners in a UK context to prompt responses that contribute to interactions which will be useful in articulating clear programme goals in the case of pre-sessional courses and foster an affectively positive learning atmosphere. The study, however, only points to teachers' use of discursive techniques to make connections between EAP course goals and teaching activities explicit but their data do not provide examples of any successful attempts to enhance and expand dialogic teacher-student talk that support discipline specific learning. The specific variables examined are the ways in which teachers maintained focus on an objective, encourage noticing of linguistic forms and supporting students' emotional engagement or affect (Heron and Webster 2018). In other words, the study only indirectly sheds light on the manner in which EAP classes try to align themselves with disciplinary learning, assuming that the course goals are always to build relevance to students' academic needs in target content areas. The findings point to a lack of due regard for adequate communicative preparation for university studies in both in-sessional and pre-sessional EAP courses despite the quality scaffolding attempted, although the fairness of this remark depends on the extent of discipline specificity envisioned. This is evident in the way the data reflect only an endeavour to tackle academic writing features or general requirements of oral communication in university studies in general, rather than their specific application in the students' disciplines. Also investigating the UK context, Dippold's study (2014) contrasting an EAP and an accounting tutorial context is useful in that it raises the

issue of whether the model of classroom interaction in EAP will "prepare students for what they will encounter in their discipline" given the telling differences observed (p. 413). Undoubtedly an aptly relevant query which is based on the fruitful comparison, it is nonetheless concerned primarily with whether EAP classes can support by simulating what students may do or need in a tutorial through providing the necessary linguistic input, it may be just as important to ask whether teachers' explicit reference to or active promotion of "content talk" by dialogically enabling student sharing of what they know about their subject is visible.

Although recent studies in Japanese and Iranian EAP contexts such as Ahmadi (2017) and Miri and Qassemi (2015) have drawn on theories of dialogic pedagogy to examine classroom interactions in EAP lessons, it is clear that the goals of these studies are analysing either the extent to which a dialogue is realised in the course of teaching or how opportunities for learning and opportunities are enhanced or stifled as a result. They have also not provided concrete insights into the ways in which discipline-specific communication is made possible through the communicative and interactional dynamics of the EAP lesson. Also, the heavy use of L1 in the Iranian context may also have been a notable factor affecting the comparability of the findings to some other contexts. Ahmadi (2017) has begun a important line of inquiry, nonetheless, which explores four Japanese EAP teachers' efforts to encourage participation through dialogic means through the use of probes and encouragement. However, even in episodes identified as examples of a "dialogic spell" indicating strong student participation in dialogue, the data indicates that students are only able to contribute one to two-word responses.

2.4 Research Gap

Despite some initial attempts at querying the EAP classroom, it is clear that such endeavours have not addressed discipline-specificity as a major feature of EAP pedagogy characterising some contexts such as Hong Kong. With the only remotely relevant study in the area being that of Li's (2012) examining teacher-student discourse over a writing task, in which it was found that multiple instances of interactive techniques such as task simplification, modelling, providing evaluative comments, maintaining interest, attention to linguistic forms (Li 2012), there is a lack of attention to the broader paradigm of discipline-specific EAP teaching being

adopted in most universities. The degree of discipline specificity that underpins the learning context deserves critical attention.

Further, the systematic inquiry approach adopted in many studies for studying classroom interaction in respect of questioning, response and feedback described above such as Smith et al (2004) and Hardman J. (2016b), while serving as strong starting points for understanding classroom interactions in different schooling contexts, have not been examined in university level EAP contexts. Specifically, fairly little attention paid to EAP practitioners' application of relevant techniques to promote the goals of discipline-specific learning. This study serves to provide the first systematic analysis of this kind. In particular, the use of uptake and probe techniques to relax teacher control will be an important focus here so as to examine the extent to which the discipline-specific EAP classroom is dialogically oriented.

Finally, given the lack of research looking at EAP classrooms in English-medium learning environments outside English-speaking contexts, the study aims to fill such a gap by examining the Hong Kong higher education context where English is the official instructional medium with no observable L1 use in EAP classrooms. In addition, it also responds to the need for Heron and Webster's (2018) for stimulated recall interview data to assess teachers' reflections on their own decision making in their use of classroom interaction techniques.

Chapter 3: Research Methods

3.1 Introduction

This chapter details the methodological procedures involved in this study. It begins with brief background information relevant to the study, including context and participants. Then, it will detail the research methods employed in the study, followed by an overview of the research questions. After this, an illustration of the research methods and data collection procedures will be attempted. A discussion of the methods of data analysis will then be elucidated. This will lead to a brief evaluation of the measures adopted to ensure trustworthiness in this study. The chapter will then conclude the ethical considerations pertinent to the research conducted.

3.2 Background information

The institution in which the present study was conducted is a large English-medium university in Hong Kong with a total enrollment of almost 30,000. A language teaching and research centre offering mainly EAP courses to undergraduate and postgraduate students is in charge of its main academic literacy support programme. The centre's second and third year in-sessional undergraduate EAP course provisions aim to meet the academic needs of the students' arising from their specific disciplines. Nonetheless, the students are generally upper-intermediate or advanced learners of English undertaking the senior year EAP in-sessional courses with B2/C1 level English language proficiency. All undergraduate students undertake a first year general EAP in-sessional course or seek exemption from it on the basis of an IELTS score of at least 7.5 or equivalent. The extent of internationalisation of the university in question is such that a small number of the students are of native or near-native English proficiency with English-medium schooling backgrounds in such countries as the UK, US or international schools in Hong Kong, Korea, China and Singapore. Overall, there is an evident mix of students from a variety of educational backgrounds where they may have experienced instructional contexts that do not readily encourage active class participation (Shea 2017) and those who prefer a more student-centred culture of learning in international classrooms.

The senior level in-sessional EAP modules (offered under the English-in-the-discipline or ED programme framework) on which teacher participants were recruited are specific to the discipline areas such as architecture, computer science and modern languages and cultures. As part of the courses, students are required to write a report on a research project in computer science, produce a bibliographic essay on a topic relating to specific countries and cultures in a stipulated genre, and write architectural descriptions of buildings. These EAP classes are taken by a considerable number of undergraduate students at the university but each of them are limited to twenty students. While classroom instruction mainly focuses in this context on different academic genres depending on courses, students would have to apply their knowledge about the target genres of research report writing and presentation in presenting their research. In-class discussions may revolve around the materials at hand but there may be interactions with students over discipline-specific content with which practitioners may be less familiar, particularly if it concerns assessments.

3.3 Participants

The three teacher participants recruited for the study have had at least three years' experience in EAP teaching. They will be referred to as T1, T2 and T3 in this dissertation.

T1 is a male native English speaker who three years' EAP experience at the centre. He holds a postgraduate degree in education and has had some experience as a general ELT teacher in Japan before arriving in Hong Kong to pursue his graduate studies. He has currently deputy coordinator of the engineering and computer science ED programme. He has taught the computer science ED module on which a lesson was observed in this study for two years.

The second participant teacher, T2, is a female non-native speaker of English with advanced proficiency. A qualified teacher with a postgraduate diploma of education (English major) and a masters degree in applied linguistics, T2 has taught EAP courses since joining the centre over fifteen years ago. She has been coordinator of the architecture ED programme since 2014 and have therefore had extensive experience teaching the module for architecture students.

T3 is a bilingual native speaker of English and a major Asian language. She has had over five years' experience in EAP teaching, of which three has been at the language centre in which the study was conducted. She holds a masters degree in TESOL and is currently pursuing a doctoral degree in education specialising in second language pragmatics. At the time of research, T3 was on board the module in which lessons were observed for the third time as a teacher.

3.4 Research methods and data collection

A mixed method approach was adopted in this study so as to make triangulation possible in maximising the validity of the research effort and to explore the issues in a multi-dimensional manner (Johnson et. al. 2007; Flick, 2008; Mackey & Gass, 2015). Pioneering the conceptualisation of approaches to triangulation, Denzin's (1978) identified four ways in which to triangulate data whereby methodological triangulation, the use of multiple methods to study a defined research problem, is the underlying approach taken in this study. The aim is to compare data to identify points of convergence in the findings (Duffy 1987). As such, it consisted of classroom video recordings of a 2-hour session of each of the two EAP classes taught by T1 and T2 and two one-hour sessions by T3 due to the course structure of the latter. In what follows, details of the aims and rationales for each of the research instrument adopted will be explained.

3.4.1 Lesson observations

Lesson observations were carried out to examine the classroom discourse practices teacher participants used in their EAP classes. Classroom observations follow what van Lier (1997) calls the "ecological perspective" on learning observation which recognises the the classroom as a site of complex interactional processes. Four audio-recorders were used with two being positioned on the two sides of the classroom, one at the back of the classroom and another on or close to the lectern at the front of the classroom. This is due to potential issues in long and narrow classrooms in which many EAP lessons that take place at the university. A static camera or recorder position has the advantage of preventing participants from feeling distracted by the presence of the recording instrument (Kilburn 2014). This will enable the researcher to more closely examine student behavior during the

lessons recorded and assist with the transcription of lessons to be explained below, particularly in terms of identifying individual students featuring in each transaction so that confusion of speaker identity can be minimised (Otrel-cass et al. 2010). Video-recording the lesson also has the advantage of capturing as fully as possible all the non-verbal aspects of communication including facial expressions, gestures and physical actions of those in the classroom (Kress et al. 1998). Field-notes were taken primarily for the purpose of detecting any possible influences on student behaviour for which the audio data may not adequately account (Otrel-cass et al. 2010). It was also important for the researcher to record details of classroom incidents to distinguish moments of whole-class teaching and other kinds of activities with the former being the focus of this research.

3.4.2 Stimulated recall interviews

Stimulated recall interviews were conducted and with all interviews audio-recorded. The interview data thus obtained, while not used directly to respond to any particular research question, was vital in providing the researcher with possible explanations to underlying decision-making processes adopted by the teacher participants. This also serves as a response to Heron and Webster's (2018) call for a "further exploration of teacher and student analysis...through stimulated recall interviews" which they believe would add to the depth of the findings of pure classroom data (p. 11). The interviews, being semi-structured and conducted two weeks after the lesson observation, enabled transcription work to be completed so as to extract relevant episodes for the preparation of interview scripts. Stimulated recall interviews are an introspective methodology which helps to uncover the underlying thinking processes of the participants (Gass and Mackey 2000). It also provides an insider (emic) perspective based on teachers' own account of their spontaneous decision-making in certain classroom strategies (Miri and Qassemi 2015), particularly those that question two targets in terms of their application of the students' input in their teaching of academic genres. The one-on-one stimulated recall interviews with each teacher participant involved the researcher playing back episodes of the lesson using a micro-analysis brainstorm approach (Lefstein and Snell 2013). Teachers were asked to comment on their motivations and decisions for using certain questioning and feedback strategies.

3.4.3 Teaching materials used in lessons observed

Documentary evidence of the materials used in the teaching sessions were collected for the purpose of gaining a more informed understanding of the tasks and activities which may affect classroom interaction including such aspects as teacher questioning and feedback giving behavior relevant to the analysis of student-teacher interactions. These include downloadable session notes as well as any handouts and visuals used in the sessions. Although not extensively attempted, a brief examination of the documents can suggest why certain classroom discourse strategies are used where design and intended outcomes represented in the course materials are sought to be realised (Taber 2013). Specifically, it allowed the researcher to determine whether the content of the course notes, for instance, was referred to closely or extent to which the teacher discussed issues relating to students' own response to the materials based on their own knowledge.

3.5 Research questions

The study aims to investigate the three teacher participants' use of questioning and feedback strategies and their impact on classroom dynamics in the EAP classroom. The two research questions (with sub-questions) were sought to be addressed in this research study:

Research Question 1 (RQ1): What is the extent of discipline specificity in the EAP classrooms observed as evidenced by the relative proportion of discipline-specific content, language and general language coverage?

Research Question 2 (RQ2): How are questioning and feedback techniques in the discipline-specific EAP classroom used to open up classroom dialogue for whole-class teaching?
2a. What types of teacher questions are used more frequently?
2b. What effects do the teacher questions have on students' responses?
2c. What forms of feedback techniques are used to promote dialogically oriented interaction and exchanges?

3.6 Data analysis

Verbatim transcription of the two sessions recorded was performed (Rapley 2008). This is because it is necessary for the researcher to reproduce as much as possible the key features of the classroom talk being recorded which may include such paralinguistic items as intonation, pauses, sound stretches and emphasis (Psathas 1995). This is useful, for instance, for detecting interruptions, student and teacher hesitations and so on. The specific choices of words and interactional patterns can offer some insights into the way knowledge is constructed during the dialogic process of classroom interaction (Mercer 2004). Therefore, a close examination of the discourse in its entirety would be necessary to the production of classroom interaction. A multi-level coding mechanism is utilised for this purpose.

The transcribed lessons was first coded for levels of discipline specificity using the ideas and concepts inspired partly by Hyland's theorisation of discipline specificity (e.g., Hyland 2002, 2016). Initially, each turn was studied on its own terms in relation to the three distinct categories of pedagogical focus detailed below but it was later examined in conjunction with neighbouring terms for deciding boundaries of themes and topics addressed, resulting in a collection of episodes in which each category was operationalised in the classroom discourse:

1) Discipline-specific language (DSL) - language geared towards specific disciplinary communication meeting audience expectations of a given field of study addressed by the EAP class in question (e.g., the use of reporting verbs in dental/medical reports, use of hedges and boosters in engineering)

2) Discipline-specific content (DSC) - matters relating to content of a discipline tackled in EAP teaching contained in prescribed texts and course materials or invoked by practitioners in the course of teaching. This can include key concepts and theories, research findings, key debates and issues in a given discipline and so on.

3) Non-discipline specific language (NSL) - any language matters not pertaining to a specific discipline including general features of academic language used in a variety of academic disciplines such as hedging and nominalisation or other usage, grammar and vocabulary use issues

The data transcribed was then coded using the prototypical triadic classroom interaction framework encompassing *Initiation*, *Response* and *Follow-up* known as IRF developed by Sinclair and Coulthard (1975) discussed in the last chapter components (I, R and respectively). With the aim of replicating in part the analysis of Hardman J's study of higher education classroom interaction for comparability (Hardman J, 2016 b), teacher initiation (I) moves, realised in the form of questions, were coded as open, closed or check questions (OQ, CQ or Ch). Student responses (R) were classified as brief or elaborated depending on the length with the former denoting responses containing 10 or less words and the latter 11 or more. The teachers' follow-up (F) on students' responses were coded using the following classificatory scheme (with some minor modifications), which Hardman J. (2016a) developed based on Michaels and O'Connor's (2012) feedback techniques in what they call "academically productive talk" in science teaching. Due to the differences in the categorisation adopted in the Hardman J.'s exploratory study (2016b), the coding of feedback moves, in particular, were completed by comparing, verifying and synthesising the techniques in the two coding schemes based on description and examples given and the following categories were used, especially for ascertaining the probe/uptake distinction crucial in this research: Teacher Acknowledgement (TA), Teacher Add-on questions (TAO) (Uptake), Teacher Comment (TC), Teacher Challenge Questions (TCQ) (Uptake), Teacher Expand Questions (TEQ) (Probe), Teacher Invitation to Further Response (TFR), Teacher Modify Questions (TM) (Probe), Teacher Praise (TP), Teacher Redirect Questions (TRQ) as well as Teacher Revoice Questions (TRV) (Probe). A detailed table with all the complete explanation of all codes is included in Appendix 1. Given that such items as open and closed questions, probes and uptake were measured in terms of occurrences per hour in some studies (e.g., Smith et al. 2004), some relevant computational efforts were also carried out after transcription for comparison purposes.

A more focused analysis of the transcriptions was attempted thereafter to look at discourse patterns and interactional dynamics in the lessons observed, which would then generate a more comprehensive understanding of the classroom talk between students and the EAP teacher participants. This was imperative in helping to ensure that a critical and holistic understanding of the dialogue unfolded in the course of

discipline-specific EAP teaching that can be analysed for the effect of specific strategies used by the teachers.

3.7 Trustworthiness

Reliability and validity are commonly adapted in quantitative studies to address concerns of credibility in educational research, but such assessment may not be entirely suitable or appropriate for qualitative research owing to its nature (Bryman 2016; Given 2008; Golafshani 2003). Consequently, an alternative evaluation that addresses the "trustworthiness" of the current study is used to ensure that the research process would generate credible results. Trustworthiness refers to the pervasiveness of research findings that are rigorous and sound (Unger 2004). According to Dörnyei (2007) and Lincoln and Guba (1985), four strategies are utilised to establish the trustworthiness of qualitative research, which were put into place for the present study: credibility, transferability, dependability and confirmability.

Credibility refers to accurate descriptions and interpretation of the qualitative data that ensures high quality of data analysis, which would make the findings believable and credible (Dörnyei 2007). The present study employed methodological and data triangulations during the research process to enhance credibility of the qualitative data. Audio recordings for all class observations and individual interviews with three teacher participants were triangulated. Also, all data were verified by an independent peer researcher so as to prevent potential biases or negligence and enhance the suitability of coding schemes developed.

Transferability is another important strategy for assessment of trustworthiness. It is understood as the ability to transfer the case to different situations by other researchers who may be interested in examining the findings in different contexts. A detailed report of the research context, including background information of informants, description of research settings, data collection and analysis, would allow other researchers to determine whether the present research is transferable (Bryman 2016). Sections 3.2 to 3.6, for instance, serve to provide such detailed information to address concerns of transferability.

Dependability is related to the consistency of findings which can be replicated (Lincoln and Guba 1985). This is achieved through a careful audit trial of data triangulation. Transcriptions of all class observations and interviews were verified by another independent peer researcher to minimise errors and reduce potential biases during the triangulation process. Effort was also taken by the peer examination to consolidate the categorisation of coding mechanism used for transcript analysis. In addition, the researcher conducted a code-recode procedure on the data twice during data analysis so as to ensure the consistency and dependability of the findings.

Finally, confirmability concerns the neutrality of the research findings, emphasising the confidence of the findings to be solely based on the participants' authentic narratives without biases or personal agenda on the part of the researcher. The data triangulation process, audit trail and external data verification aforementioned in this section were the effort taken to ensure the confirmability of the present study.

3.8 Ethical considerations

Research ethics requires the researchers to conduct their research with due respect to the rights, will and privacy of their participants. Ethical approval for the present study from the university was sought prior to any data collection procedures described above. Before the recording of the three teaching sessions was conducted, the researcher visited the classrooms to explain the research to students in teacher participants' classes. Students were provided with information on the research as well as a consent form printed overleaf, which they were then asked to sign and return to the researcher. All participants were informed of their right to withdraw from the study any time during the research process. Their identities were kept anonymous.

Same level of integrity and confidentiality was ensured for the individual interviews with the three teacher participants. A relaxed and safe environment was provided during the interviews, and they were assured that their identities would be kept anonymous; their teaching performance and their comments during the interviews would not be evaluated or disclosed to a third party under any circumstances. All

data collected were stored on a password protected device and retained for a period prescribed by the the university's research data retention regulations.

Chapter 4: Results and Discussion

In this chapter, I present classroom observation and stimulated recall interview findings by first reiterating the research questions detailed in chapter 3:

RQ1: What is the extent of discipline specificity in the EAP classrooms observed as evidenced by the relative proportion of discipline-specific content, language and general language coverage?

RQ2: How are questioning and feedback techniques in the discipline-specific EAP classroom used to open up classroom dialogue for whole-class teaching?

2a. What types of teacher questions are used more frequently?

2b. What effects do the teacher questions have on students' responses?

2c. What forms of feedback techniques are used to promote dialogically oriented interaction and exchanges?

In order to address RQ1, a quantitative analysis of the amount of class time devoted to each area of EAP pedagogical focus will be performed. In responding to RQ2 (2a-2c), the use of various types of questioning techniques, student responses and feedback techniques in the classroom for whole-class teaching will be analysed quantitatively and supplemented with a close examination of transcript evidence. This focus on feedback techniques alone here is again based on the dialogic pedagogical theorists' notion that feedback opens up classroom discourse (e.g., Hardman J. 2016a). The nature of such feedback techniques will then be assessed for their ability to generate dialogically oriented interaction and exchanges, with due attention being paid to the context and aims of the EAP instructional effort in the observed lessons from the transcript evidence. Relevant episodes to illustrate exchanges geared towards discipline-specific dialogic communication will be presented. Teachers' own views of their discipline specific pedagogical orientation will also be discussed in relation to the findings relating to their use of feedback techniques. A summary of the key findings will be presented in the next chapter.

4.1 Degree of discipline specificity of lessons observed

Table 1 below shows the proportions of the lesson devoted to different areas of EAP subject matter in relation to language and content. Overall, it is clear that the proportion of time devoted to discipline-specific language and discipline-specific teaching totally 79.9% indicates a reasonably high degree of discipline specificity in the EAP classes observed, with discipline-specific content focus taking up a relatively higher percentage of 46%. Nevertheless, notable variations can be seen in the amount of time taken up for three pedagogical domains, where T2's lesson recording a significant amount of lesson time in which the teaching focus was not discipline-specific (46.5%). In T3's EAP lessons for modern language and cultures majors, on the other hand, the entire amount of whole-class time recorded had a discipline-specific focus with content taking up roughly 41 of the 58 minutes (70.1%), indicating an extensive amount of engagement with content-related matters compared to language used for disciplinary communication. This is at variance with T1's lesson, whereby more than half of the whole class time was spent on language use in computer engineering report writing.

	T1	T2	T3	Total
Target discipline	Computer Science	Architecture	Modern Languages and Cultures	
Total whole-class time with a discipline specific focus or strategies	37 mins 20 secs	55 mins 05 secs	58 mins 43 secs	151 mins 08 secs
Total time with a discipline-specific content focus	13 mins 32 secs (36.3%)	14 mins 50 secs (26.9%)	41 mins 09 secs (70.1%)	69 mins 31 secs (46.0%)
Total time with a discipline-specific language focus	19 mins 3 secs (51.0%)	14 mins 39 secs (26.6%)	17 mins 34 secs (29.9%)	51 mins 16 secs (33.9%)

Total time with a non-discipline-specific language focus	4 mins 45 secs (12.7%)	25 mins 36 secs (46.5%)	0 mins 0 secs (0.0%)	30 mins 21 secs (20.1%)

Table 1: Proportion of discipline-specific and non-specific language vs. content coverage

A more contextual examination of the transcript data reveals that T2 has sometimes framed discipline-specific language use in a rather general way without regard to context and purpose, causing the discussion to be more focused on the language itself rather than how it is used for discipline-specific rhetorical functions. An example of a typical moment of such general language treatment episodes is presented in Excerpt 1. Although the teacher was seeking to convey the significance of the metaphoric language (including simile use) in architectural writing, a discipline-focused discussion that encompasses some degree of thinking about the communicative purpose of writing characterising architectural building reviews is not always readily discernible. This is partly because the teacher was too caught up in an individual language item in its form as well as the lexical coverage and details of the text. Many of the short responses that pervaded the lesson only point to understanding of textual content and specific instances of vocabulary use but not how they relate to their role in strengthening building description. Discipline-specificity is therefore not upheld in this pedagogical episode.

Excerpt 1 (T2):

T: Can you give me other words you can use in your writing like if you want to say something A is like B...as if...as though…

S: seems…

T: It seems? Okay...seeeeems...uhh...or like? kay...yeah...kay…(T reads: Calatrive...Calatrava's buildings don't sit on the ground, they dance…) Okay...so they dance...they don't sit on the ground...so it's a metaphor...what category do

you think this is…? Can you create a category? Yourself? Hmmm? (Raises voice and tone)...we've got lots of...in blue...can you look at the text in blue? Abstractions. Very abstract. Not concrete…(T reads: strangely otherworldly...does not belong to this world)...yeah it belongs to...another world...an unknown world...so...it might evaporate in a MIST...not in the air but mist...something that you can't see very clearly...mystical...right? How do you feel about this building? Up to this point? (Breathes) Apparitional…actually means ghostly...right? This word means...ghostly...so how do you feel about this building? This is like a…	
S: Ghost	

On the other hand, T1's lesson featured instances of discipline-specific language coverage typified by Extract 2 below. Concerned with the generality of the use of the evaluative comparative adjective "better" in the sentence found in the discussion section of the report, the teacher made an attempt to engage students in thinking about the use of evaluative language in context. Teacher 2 indeed remarked in the interview that she was trying to "move into vocabulary" and as a language teacher she saw this scaffolding as fundamental. This suggests a conscious prioritisation of language-in-general over language-for-the-discipline.

<u>Extract 2 (T1):</u>

Turn	Speaker	Content
156	T	I have a...I have a question about this…"Although the figure cannot say which one is better"...what does better mean? Which one is better? Now...what does that mean do you think? Is that referring to the writing quality? Is that referring to the more truthful...is that referring to the one that's not fake news...what does (chuckles) what does better mean? I'm not sure...ahhmmm...more...yeah?
157	S	Maybe he said uhh...more stable is good or...fluctuates a lot…
158	T	Which one is better? Yeah...is that if it fluctuates or is that if it stays stable? I don't know which one is better...actually...okay…

159	S	That's what he means.

In terms of the topics covered in the lesson with different areas of EAP focus, Appendix 2 provides a comprehensive overview that elucidates the range of themes covered under each category of pedagogical focus. As can be seen, it is apparent some of the turns do sometimes overlap (marked with an "*") even if appear to be addressing multiple topics and themes or that the teacher abruptly or otherwise switch to focus on other matters.

4.2 Analysis of questioning behaviour and student responses

4.2.1 Types of teacher questions asked

Table 2 below demonstrates an overall picture of teacher questioning behaviour in the lessons observed. It shows that in general, open questions (58.0%) were more frequently used than closed questions (33.1%), despite considerable variation as to their relative proportion. An overwhelming majority of the questions in T1's class were of an open nature, while significantly more closed questions were observed in T3's lesson (55.8%), accounting for over half of the questions asked. The latter is indeed in stark contrast to T1's lesson, where only one question was a closed one. Only T2 appears to have been marginally similar to the average in terms of distribution. It should be noted that T3's lessons contribute a smaller number of questions to the data set given a significant amount of small group work in the lessons where students were working on a non-whole-class writing task.

	Teacher 1's lesson	Teacher 2's lesson	Teacher 3's lessons	Total
Open questions	59 (95.0%)	41 (46.6%)	12 (27.9%)	112 (58.0%)
Closed questions	1 (1.6%)	39 (44.3%)	24 (55.8%)	64 (33.1%)
Checks	2 (3.2%)	8 (9.0%)	7 (16.3%)	17 (8.8%)
Total in each	62	88	43	193

lesson / Total of all lessons				

Table 2: Distribution of sub-types of teacher questions in the three teachers' classes

Of all the open questions, re-initiations (marked "RI" below) accounted for a quite a substantial portion of the open questions. Many of such instances were used for purposes such as asking for more contributions phrased commonly as "what else", "what about you", "anything to add" or modifying the questions so as to attract responses from students (See Appendix 3):

Although some part of T1's lesson might appear to be dominated by closed questions, a closer examination shows that the teacher did not anticipate exact answers but students' exploratory efforts. This was also confirmed in the interview data where the teacher suggested that:

"I want them to share, I want them to vocalise...what kind of content they would include for example in this specific area so say difficulty umm i would rather instead of making them think of the vocabulary at that time right because maybe it's not the best vocab like a hedging vocab maybe it's not the best one to come up with spontaneously maybe they can worry about a specific hedging vocab when they go home and write it…"

Extract 3 (T1):

Turn	Speaker	Content
92	T	So hedging is vocabulary that we use to show probability. Okay? To be realistic. How can we illustrate this? (Noise coming from the background) (T starts to write on the board) Okay...zero percent. Yeah. one hundred percent. Ummm...**okay can you give me...can you give me another word for zero percent? (open question)**
93	S	Impossible.
94	T	Impossible...okay.

		Impossible...anything else?
95	S	No
96	T	Never? (Chuckles) Yeah? No?
97	S	No. (Chuckles)
98	T	(Chuckles) None? Anything else?
99	S	Nothing.
100	T	Ummm...nothing? Yeah. Okay…Let's move to 100 percent. Pure truth here. **What's another way of saying 100 percent? (open question)**
101	S	Must
102	T	Must? Perhaps. Yeah. Okay.

4.2.2 Student responses

As Table 3 below demonstrates, student responses were assessed for their quantifiable extensiveness for analysis in terms of length. An answer consisting of a single word or phrase that totals less than ten words is considered a "brief response". Conversely, where a student made an attempt to answer a question with 11 words or longer, that response would be classified as an "elaborated response". Results show that on average, brief responses occurred more frequently. Nevertheless, significant variation among the three classes was observed in terms of distribution of response types with T3's lesson generating a much higher number of elaborated responses (22) that made up almost 45% of all student answers, which is almost 50% more frequently observed than in T1's lesson (29.8%). Nonetheless, a mean value of 10.8 words was recorded from the responses in T1's lesson, compared to only 5.7 in T2's lesson, showing that students were producing answers that were on average almost twice as long. This is followed by 9.8 words in T3's lessons, suggesting that answers in general were still closer to the 11-word threshold for elaborated responses than in T2's lesson. On the whole, student responses in this data set showed a relative tendency towards brief reponses,

however, with a total of only 53 elaborated reponses and 73 of the 173 answers being 1-word answers.

	Teacher 1's lesson	Teacher 2's lesson	Teacher 3's lessons	All
Elaborated responses	17 (29.8%)	10 (15.0%)	22 (44.9%)	53 (30.6%)
Brief responses	40 (70.2%)	57 (85.0%)	27 (55.1%)	120 (69.4%)
All responses	57	67	49	173
Mean value	10.8	5.7	9.8	8.6

Table 3: Distribution of student response types in lessons observed

On closer inspection, it is not surprising to note that the amount of elaborated responses being greater in number in T1's lesson is co-extensive with the proportion of open questions as highlighted in the previous section. In many of T1's exchanges with students, despite some noticeably long stretches of monologic instruction and commentary, as is obvious from the extract below, his response featured conversational features such as hesitation markers (ummm, you know) and rephrasing attempts ("they kind of...they try to have") that showed an attempt to think with the students rather than constantly inundating students with questions. An example of more elaborated responses is provided below in Extract 3, where T1 converses with the students over the clarity of writing as perceived in the sample report being discussed in the lesson. Here, the ongoing discussion that kickstarted in Extract 2 shown above continues and now focuses on the extent to which the challenges highlighted covered in the report is genuinely significant to warrant mention. Although turns 210 and 212 both feature extended questioning and commentary effort, they succeed in yielding very positive results in terms of affording students' deeper interpretive effort in deciphering meaning (turn 211) based on their understanding of whether it is an "inherent difficulty" or "irresolvable problem" (turn 213).

Extract 4 (T1):

Turn	Speaker	Content
210	T	Okay...ummm...here's my questions...so...regarding the first point...yeah...is it...is it actually that...time consuming? To...open up different browsers? And test the website on different browsers? Yeah, at least the three popular ones...Firefox, Chrome and Internet Explorer. They're usually installed on all of the Chi Wah [reference to university student study area] computers. Anyways...yeah...so is it really like a big problem encountered or…?
211	S	I...I think he means not only test (St X: yeah) but also to fix the bugs...configure…(T: umm hmmm) to make it compatible across all the process… [26 words]
212	T	I definitely agree with you. I'm glad you brought that up. BUT, when I looked at his writing, I don't know specifically what bugs...yeah...I get the sense that...he's...he or she was too lazy to write about it...cos it was 3 am and they had to submit it...yeah...ummm...but...I completely agree...yeah maybe they ARE bugs...that they would have to solve in...in...ehhh...some of...you know there's some specific browsers...but, we don't know...hasn't been written...it hasn't been tested...yeah...okay...ummm...the second one...second one seems like a bit more of a substantial difficulty I think...yeah, getting websites to run...you know...desktop level...different screen sizes and mobile versions...yeah, requires a bit more work...I think...some website managers...like content managers...wordpress or wix...they kind of...they try to have like a….automatic...mobile version...Right? Yeah they adapt. Any other comments?
213	S	Umm I guess there's a limitation about umm...like...inherent difficult challenge...that can't...cannot be easily overcome or resolved for these two umm...well apparently they're getting solutions to these challenges so I was wondering there're more difficulties rather than…[41 words]

On the other hand, in T2's lesson, however, brief responses were manifestly prevalent (85%) and most of them took the form of one-word or single-phrase answers to closed questions. In some cases, they amounted to verbal gap fill exercises. In Extract 4 below, where the students and teacher were on the topic of what makes the description of buildings "interesting", an effort was made to elicit exact words from students with the lengthening of the final syllable at the end of the statement preceding a question. Statistically, there is evidence to suggest a sharp reduction of response length beyond this point with the mean of all responses occurring after this episode approximating 3.2 words, compared to a mean of 14.5 before turn 47. This, therefore, speaks strongly to the possibility that students had become sufficiently discouraged from extending responses.

Extract 5 (T2):

Turn	Speaker	Content
47	T	What is the purpose of this building? **This is a…**
48	S	*Bank*
49	T	Bank. Yeah. Does the numbers...do the numbers remind you of uhhh...the function...haha? Maybe that's a bit far-fetched, not really? Haha, okay...so one feature is the use of numbers. Okay, how about the shapes here? Can you tell me all those words that describe the shapes? [PAUSE] like shapes of the windows, **shapes of…**
50	S	*Square*

4.3 Teachers' use of feedback techniques

4.3.1 Most common feedback types

Table 4 below shows a breakdown of teachers' use of feedback move types in the lessons. It was found that the majority of feedback moves were teacher acknowledgements (TA) and teacher comments (TC) with each category representing close to one-third or one-fourth of the whole-class feedback turns. Variation between teachers in the use of these two strategies are also less significant with all three reporting a percentage of the use of such techniques that is within 5% of the average figure. It should also be pointed out that very rarely does TA occur alone in any of the three EAP lessons observed as stand-alone TA instances account for less than 7% of all whole-class feedback in each lesson presented below. This suggests that teacher acknowledgements of students' responses were usually followed by other techniques with the most common being teacher comments (TC). Acknowledgements were not further classified into positive or negative types as only one instance of the latter was recorded in one observed lesson. All teachers observed were generally consistent in their use of the feedback move to explicitly convey to students their contributions with remarks such as "okay", "yes", "right" or answer repetition being the dominant forms, if not summarising, building on or rephrasing them in some ways.

Feedback Types	Count			
Ts	T1	T2	T3	**TOTAL**
Teacher acknowledgement (TA)	34 (29.3%)	53 (37.1%)	34 (27.4%)	**121 (31.6%)**
Teacher Add-on Questions (TAO) - Uptake	5 (4.3%)	1 (0.7%)	1 (0.8%)	**7 (1.8%)**
Teacher Comment (TC)	23 (19.8%)	41 (28.7%)	30 (24.2%)	**94 (24.5%)**
Teacher	1	--	2	**3**

Challenge Questions (TCQ) - Uptake	(0.9%)		(1.6%)	**(0.8%)**
Teacher Expand Questions (TEQ) - Probe	10 (8.6%)	23 (16.1%)	31 (25.0%)	**64** **(16.7%)**
Teacher Invitation to Further Response (TFR)	11 (9.5%)	7 (4.9%)	1 (0.8%)	**19** **(5.0%)**
Teacher Modify Questions (TM) - Probe	3 (2.6%)	8 (5.6%)	9 (7.3%)	**20** **(5.2%)**
Teacher Praise (TP)	12 (10.3%)	8 (5.6%)	10 (8.1%)	**30** **(7.8%)**
Teacher Redirect Questions (TRQ)	7 (6.0%)	1 (0.7%)	1 (0.8%)	**9** **(2.3%)**
Teacher Revoice Questions (TRV) - Probe	10 (8.6%)	1 (0.7%)	5 (4.0%)	**16** **(4.2%)**
TOTAL	**116**	**143**	**124**	**383**

Table 4: Percentage breakdown of follow-up strategies

Despite the high degree of consistency in recognising students' input and providing some elaboration discussed above, more notable variation was recorded in the use of teacher praises. Insofar as the use of praises is concerned, although the three teachers have only made sparing use of them, it is also noteworthy to point out that the manners in which they were used differed with T1 using "I'm glad you brought that up" and "good point" in conjunction with some comments explaining the praise while the other two generally using "good" and "excellent" only.

4.3.2 Co-occurrences of teacher acknowledgements and extended comments

The incidence of co-occurrence of teacher acknowledgements and teacher comments in the same turn was more frequent in lessons taught by T2 and T3 than that by T1. This suggests that T2 and T3 provided some further input beyond mere acknowledgement. However, in this connection, it is important to reiterate that frequent and extended evaluative follow-up on the part of the teacher would discourage student participation (Nassaji and Wells 2000). This was especially the case with T2 and T3 whose students in the classes observed made relatively shorter responses (5.7 and 9.8 words respectively) than those in T1's lesson. Indeed, in much of T3's lesson such as the one shown in the transcript below (Extract 5), the concomitant use of acknowledgements and comments in turn 60 has the effect of reducing students' willingness to provide extended responses. In this part of the lesson, the discussion focused on the contributions made by different ethnic groups to early industrialisation in Hong Kong from the perspective of the author of an assigned reading. It is clear that the student, given a reasonable amount of wait time, was able to produce a relatively extended and nuanced response to the question (turn 55). However, following the teacher's attempt to provide an extensive echo which basically rephrased the entire answer, the expand question (TEQ) that followed attracted a far shorter response, partly also because of the closed nature of the question although the teacher added a further one to ensure understanding (turn 58). Despite the fact the student then tried to make an effort to remain fairly responsive in turn 59, the answer is clearly shorter and less elaborated. The teacher then echoes again and elaborates on the answer at length in turn 60. The switch to another topic causes the student to say even less, thereby closing the dialogue.

Extract 6 (T3):

Turn	Speaker	Content
54	T	And what is the writer's position? He keeps presenting two perspectives from two different readings, what is the real perspective? The writer's perspective? [Silence for 8 seconds]

55	S	The perspective is that uh he acknowledges the role of the Shanghai businessmen but at the end of the day, the Cantonese played a far larger role. [27 words]
56	T	Right...so he doesn't clearly say...my perspective is...does he? Right... he acknowledges the role that the Shanghai people played...but he rebuts by saying that the Cantonese people played a bigger role, more valuable, uh higher valued goods. Okay. **(TC)** So whose perspective does he agree with? **(TEQ)**
57	S	Goodstach
58	T	Goodstach. Yeah...the second author. Okay? And you know this by…what? How do you know that he supports Goodstach? **(TEQ)**
59	S	The proportion of the writing that he spends ummm...elaborating on Goodstach? [11 words]
60	T	Yeah, that's right... there is a great proportion discussing Goodstach's, ah ha, idea. So that's how we know that this writer supports one writer over the other one. Okay. So these are the kinds of strategies that you can use when rebutting, er different ideas from sources. Okay, now which information come from Tsang and which information come from Goodstach? ...Kind of already done it from you, isn't it? It's Tsang. It's already on the first two...he's already summarised the ideas in two lines...oh sorry, two sentences. But for Goodstach's idea, it goes back...it goes back, refer it and discuss it and evaluate his idea, okay. And then we know that he puts more weight on Goodstach, okay. So the evaluation analysis and the rebuttal should be thoroughly discussed, not just mention it, but thoroughly discussed, okay. So if you recall the CUE argumentative essay, what

		was rebuttal like? Which is like a patchwork wasn't it? It was like you make your stance, you break down your argument from this article, and then rebuttal from this article, okay done, that's the structure. But in argumentative essay, you need to discuss thoroughly, okay. Narrow and deep, narrow and deep. Now that is, narrow and deep discussion, is the good way to present your ideas. Okay? **(TC)** The last question. Um, what manage tool does the writer uses to make it clear what come from which source? What does he use? **(CQ)**
61	S	simple words.

4.3.3 Teachers' extensive use of probes

The EAP teachers in the study made quite substantial use of the three types of probes with approximately 26.1% of the follow-up (F) turns being classed as such. They took primarily the form of teacher expansion questions (TEQ) (16.7%), followed by Teacher Modification (TM) and Teacher Revoice Questions (TRQ) (5.2% and 4.2% respectively). Despite some variation in terms of the precise extent of use, T3, for instance, probed for further explanation from students far more frequently with teacher expansion questions taking up one-fourth of the turns, compared to less than 10% in the case of T1 and 17.2% in the case of T2. It would be critical to examine how far such expansion questions are used for higher level evaluation involving the integration of students' responses into subsequent questions and how many of them were lower level questions used to obtain further information or clarification, which will be discussed further below.

The excerpt below demonstrates the typical use of probes observed and is indicative of an overall picture of its productive utilisation. This lesson featured the teacher trying to get students to read for detail to understand contextual information relating to Hong Kong colonial history. Where students were trying to regurgitate the text and showed a lack of clear contextual understanding, the teacher intervened by probing deeper and requesting further evidence of understanding. This interest in

ensuring sound understanding is consistent with the T3's own view as expressed in the stimulated recall interview that there is always a need to "dig deeper and ask them where, why, which points are connected to what" rather than accepting responses at their face value:

Excerpt 7 (T3):

S: "quote the signed the state... statements of officers who claimed to have"...er the earnings of his entire career. (READING PASSAGE ALOUD)

T: Um, okay, but um, why...why was he able to say that this is the top priority? **[PROBE]**

S: 'Coz HK Police Force organisation is "on the paramilitary lines with strong central command structure". (READING PASSAGE)

T: Okay...so yeah...Yes…(silence for 2 second.)..okay, there are different things they need to take care of in their agenda, but why were they able to prioritise...this case? About anti-corruption campaign? Is the corruption, was the corruption, evident? And how was it evident? **[PROBE]**

S: cos... um the whole government had to the application form of the... that was sort of evidence...

However, the kind of dialogicality fostered here is very much teacher-led and in most cases consistent with the all lessons observed. Probes can be seem as remedying situations of inadequate engagement and interaction in the lessons and dialogicality as a pedagogical vehicle can seem to be reactive.

Another notable dimension of probe use can be identified in T1's lessons where the revoice technique (TRV) was consistently used for clarification and to invite students to share their progress in completing the required research project to which the course serves as an adjunct module. Given that the teacher was not entirely familiar with the subject knowledge, seeking to verify understanding of a student's contribution became integral to conversations geared towards the reporting of

progress. As is clear from the conversation below, as a type of probe questions, teacher revoice technique was crucial to the collaborative partnership between subject and language specialists in ensuring that the teacher understands what students have accomplished so far:

Extract 8 (T1):

> T: Have you tried this, tried that? Did you quickly test this, test that? Anything? (volume drops)...{Student name - J}? Yeah?
>
> S: Yeah I used the natural language processing package (rising tone) and...I've already tried to ahh...scratch the website and put all the raw text into the package and see…(T: alright...okay)...the sample result
>
> T: Is it...is it the package you're gonna be using? **[Teacher Revoice Technique - TRV]**
>
> S: Yeah…
>
> T: Of course...yeah...okay so you've already played around with something...you've already...even if you've…
>
> **Have you analysed it or not really**? **[Teacher Revoice Technique - TRV]**
>
> S: Ahh...ahh it's not like analysing because I just used the existing method. Existing...so…function

The keen willingness of T1 in using the revoice technique to help navigate the territory of the unfamiliar is reflected in his orientation towards discipline-specific EAP teaching where he suggested that:

"*I'm not the holder of all the knowledge. I'm not the expert...so I give them some suggestions and try to elicit from them. Interacting with them helps me tailor (materials) specifically to their situation according to their project*".

However with T3, the same degree of openness to the exchange of expertise is not often shared or somehow limited to seeing students as having the responsibility to report on their development of specialist knowledge over the course of the teaching of the EAP module where they take their own initiative to conduct research into a topic of their own choosing. She did not, therefore, find it necessary to engage students in deeper discussions relating to their own research and believed in students' own initiatives and saw "consultation sessions" as the occasion for knowledge exchange, not "regular lessons" where academic reading and research skills are taught. As is apparent in her comment that she is a "bystander" and that it is a "good thing" she does not have expert knowledge so that:

"*they (the students) are taking certain initiatives, ownership of their interpretations, their ideas, and their creation of their own essay...they are expected to apply...to apply skills and conventions (taught in class) to their own research contexts*".

4.3.4 Teachers' infrequent use of uptake

It is crucial to note that as a strategy that involves incorporating an answer as a key resource for a follow-up with the same student, uptake is a kind of feedback move that seems to feature less prominently in all three EAP lessons observed in this study with a 3.25% rate of occurrence (5 per hour) of all whole class teaching turns (see Table 5 below) with an absence of any such application T2's lesson. This percentage apparently indicates that it is rarely applied as a technique in the classrooms observed. Most of these uptake questions do require students to provide further input and are open in nature. Overall, teachers have often stayed with the same student on many occasions where their views are elicited but generally failed to open up the discussion to the class.

Of the very small amount of uptake attempts observed in the three teachers' classes, most of them occurred in T1's lesson with discipline specific content recording a larger though still insignificant overall proportion. Most of the time, as will become apparent in the examination of the instances of probes in discipline specific discourse in the lesson data, the teacher is more concerned with encouraging the student from whom a response is received to say more rather than inviting others to contribute and hence the lack of uptake despite the frequency of

follow-up attempts. Even the very small amount of uptake questions were rarely met with success in terms of eliciting elaborated responses from students. One example of this kind of successful uptake is provided in Extract 8 below, in which T1 was making an attempt to continue an ongoing discussion on how a supervisor in the computer science department would respond to the "difficulties encountered" in the sample report selected for discussion in the lesson, which started with a teacher challenge question (TCQ) in response to a students' answer to the quality of documenting difficulties in computer science project reports. Where the students were slowly digressing the topic of what to use different browsers for, a point very specific to the target text in question yet less discipline-focused, the teacher intervened and invited a student to add to another student's previous contribution with a teacher add-on question (TAO), also serving as uptake. Achieving the purposes of maintaining focus and challenging students to think more critically about audience's perspective, this instance is very much dialogically oriented as envisioned by Nystrand et al. (2003) despite an absence of explicit student questions and presence of an attempt to assign a question to students by name:

Extract 9 (T1):

S: Yeah I know there are two problem there they're encountering. One very...straightforward uhh..type like that the headline like...yeah…

T: **If you were the supervisor, what would your...what would your comment be to these or...either one of those? [Teacher Challenge Question - Uptake]**...you can choose whichever one...yeah...if you were a supervisor...for this student in particular...think like a supervisor now...with that cap on…

S: They didn't explain...why they chose firefox and chrome and the... that resolution for their project at that time

T: At THAT time. Yeah? Okay...at this term the website views in the best by using the Mozilla Firefox...don't need the...by using Mozilla Firefox and Google Chrome. Okay...but ummm...what about internet explorer? Well, I mean that's...a VERY popularly used one…(sts chuckle signalling the fact that they get the

joke)...I don't know why...anyone's using it...but what about internet explorer? How long does it take to open...open the website in...in another browser…?

S: You can use just to download Google Chrome. (Laughter)

T: To download Google Chrome? (Chuckles) That's what everyone uses it for right?

S: Yeah

T: Ummm...**John, any...anything to add to that? [Teacher Add-On question to invite another student's contribution - Uptake]**

S: Yeah...I think the last "therefore" is not uhh...is not explain why...why is that (they) use Mozilla…

	Teacher 1	Teacher 2	Teacher 3	Global
Whole class turns / total turns	114 / 219	171 / 159	107 / 107	338 / 485
Whole class time / Scheduled lesson time	38 mins / 120 mins	55 mins / 120 mins	37 mins / 120 mins	130 / 360 mins
Uptake	8 (12.6 per hour)	0 (0 per hour)	3 (4.9 per hour)	11 (5 per hour)
Uptake (percentage)	7% of whole class turns	0% of whole class turns	2.8% of whole class turns	3.25% of whole class turns

Table 5: Amount of uptake - percentage and per hour

4.4 Discussion

In response to RQ1, given the instructional context of the university, it is perhaps not surprising that the three teachers observed were able to maintain a relatively high degree of discipline specificity in their teaching of EAP. With much of the lesson time being devoted to discipline specific content and language coverage, the pedagogical orientation reflected in the classroom exchanges show that the teachers were by and large capable of addressing the linguistic and textual organisation specific to target discipline (Bhatia, 2002; Hyland, 2002, Hyland 2006, Hyland 2016). While the design of the material used in the lessons contributed to the pedagogical endeavours, it is also clear that the teachers made a concerted effort in linking linguistic knowledge with the context in which students are to express such knowledge in light of the expectations of their discipline (Hyland 2016). This is evident in the related issues such as clarity and audience awareness, for example, were tackled. The distinctiveness of disciplinary communication was in many cases, therefore, appropriately emphasised by the practitioners in this study. It is instructive to recognise, however, that the absence of any research to query this suggests a lack of comparability with classes in pedagogical efforts in other EAP contexts where discipline specificity is emphasised.

In relation to RQ2a, the findings from the above analysis of teachers' use of questions and feedback techniques as well as students' responses differ expectedly in some ways from those presented in previous research while concurring to some extent with some studies. In terms of the use of questioning techniques among the three teachers of EAP in this study, a higher percentage of open questions (58%) were asked on average than in previous studies conducted in the Hong Kong secondary school EFL context as well as UK schooling contexts where open questions were sparse (Smith et al. 2004; Tsui 1985; Wu 1993; Yang 2010). However, it must also be reiterated that the effect of T1's predominant use of open questions in his class is a result of his own exploratory approach as discussed in 4.1.1. The fact that he did not demand exact answers also meant that some of the questions that would otherwise appear to resemble closed questions in other contexts in terms of their form which require efforts at more contextual interpretation. In comparison to Hardman J. (2016b), a research conducted in a UK higher education context, the results in this study also contrasted markedly as closed questions had a 50% rate of occurrence in the university tutorials compared to about

one-third in the EAP classrooms in this study. In EAP classes, therefore, it could be argued that teachers did show a slightly stronger tendency towards more open questioning techniques.

On the topic of students' responses (RQ2b), it was found that the number of elaborated responses more than doubled the amount, with over 30% of such responses recorded compared to only 13.5% in Hardman J.'s (2016b) UK university study. The mean of 8.6 words found in this study was also more than twice the number reported in Hardman J.'s (2016b) study of university content area classrooms (four words). T2's lesson, however, generated only a mean of only 5.7 words and the distribution of brief and elaborated responses were more similar to that found in Hardman J.'s (2016b) study. These results also contrast, unsurprisingly, with Yang's research (2010) with responses greater than three words being virtually non-existent in many classrooms observed in the secondary EFL context. Overall, therefore, teachers' more extensive use of open questions in tertiary-level discipline-specific EAP classes generally resulted in more elaborated responses and effects of reluctance and lack of readiness suggested in Tsui (1996) and Shomoosi (2004) were not observed.

In terms of the use of teacher feedback moves (RQ2c), the findings are summarised in Table 6 below for ease of comparison, which indicate surprising consistency with some contrasts. The table shows that with teacher acknowledgement (incorporating negation) (TA) (31.8%) being the most common follow-up move category, the study is In broad agreement with Hardman J. (2016b), which nevertheless reports an even higher percentage of 54.3%, with the comment typically being only an acknowledgement of "correctness" or repetition of students' answers. Yet, it is also quite apparent that the teachers in the present study showed a greater tendency to use teacher probes where they remain with the same student to ask for further elaboration or expansion, realised typically in the form of a teacher expand question (TEQ) or teacher revoice questions (TRV) as shown above. Even when compared to other higher education studies such as Boyle (2010) and De Klerk (1995) where teachers were shown to be requesting confirmation and clarification at a rate of 18%, this study still demonstrates a somewhat different picture. The comparatively extensive use of teacher expansion questions by teachers in this classes examined shows teachers were in general more ready to request extension of students'

responses. With the exception of T2, the two other EAP practitioners exhibited a far more proactive attitude to following up on students' responses.

Moves	Present Study	Hardman J. (2016b)
Teacher acknowledgement and negation	31.8%	54.3%
Teacher Comment	24.7%	21.9%
Teacher Praise	7.9%	10.3%
Teacher Probe	25.7%	9.9%
Teacher Uptake	2.6%	3.6%

Table 6: Comparison between the use of feedback moves in the present and Hardman J.'s study (2016b)

The uptake figure in this study is lower but not by a significant percentage compared to the national average of only 4% of teaching exchanges in UK primary school contexts while 43% of teachers use no such strategy (Smith et al 2004; Wells and Ball 2008). Hardman J.'s (2016b) findings in the tertiary context is largely consistent with this figure with a frequency of occurrence of 3.6% in the medium-sized UK university tutorials studied, which means the EAP teachers in this study appear to be almost as unlikely to use uptake to engage students and develop thematic unity in discourse with the interweaving of student responses and teacher questions maintaining coherence in classroom discussions (Nystrand et al. 2003).

Compared to Smith et al. (2004)'s UK National Literacy and Numeracy Strategies study, the amount of uptake per hour in the lessons in this study also appear to be broadly similar to that found in previous research (5 per hour). Although the kind of dialogicality through the use of feedback move to propel continuous exchanges may suggest a relatively optimistic picture in the EAP lessons examined here, it cannot be assumed that uptake necessarily leads to dialogic interactions in the classroom, especially if students are not sufficiently motivated to respond further, a point

recently raised in a study of university level English classrooms in Japan (Ahmadi 2017).

In line with Ahmadi (2017), it was observed that teachers' attempt to involve students' in classroom exchanges was conducive to enabling them to develop the confidence to articulate ideas, a point T1 emphasised strongly in his interview, as well as affording students' development of a sense of responsibility for their own learning, as emphasised by T3 in her sharing during the interview. It is evident from the results of this study, nonetheless, that simply by making some use of uptake or probe does not necessarily lead to a dialogic incident or spell being enacted, as also highlighted in Ahmadi (2017). Notwithstanding the fact that teachers may fall short of inculcating a dialogic mode of teaching as defined in Nystrand et al. (2003), it is clear that dialogicality manifests itself in episodes rather than lessons in their entirety where it is conceptually inappropriate to describe a whole lesson as "dialogic". Indeed, as Hardman J. (2018) has recently suggested, it is the art of using a combination of different modes of teaching with an emphasis on awareness of pedagogical purpose that gives rise to well executed teaching in a given learning context. The interplay between monologic and dialogic interactions is indeed critical (Wells and Mejia-Arauz 2006).

Transcript evidence from the present study presented above has somehow been in contrast to Miri and Qassemi's (2015) study in the Iranian context where material texts were overwhelmingly relied upon with assigned tasks around source texts. Although in some lessons, teachers did orient classroom teaching towards a certain text, the use of feedback techniques have shown that teachers have actively called upon participants to think beyond the materials at hand. The precise extent to which probes, for instance, were used to extend dialogue around a text may vary, as was evident in the three teachers' diverse attempts to adopt this technique for various purposes to address discipline specific content, language or non-discipline language learning points. The use of the revoicing technique by T1 to ask relevant questions to elicit further information about or attempt verification of disciplinary knowledge. Overall, nevertheless, three teachers have made varied use of different feedback techniques of engagement to promote some productive dialogue the EAP lessons responding to the demands presented by specialised disciplinary learning (Heron and Webster 2018).

Chapter 5: Conclusion

This chapter begins with a summary of the findings identified in chapter four, followed by the implications of the findings. This will then lead to a discussion of the limitations of the study. Recommendations for further research in the area will be proposed.

5.1 Summary of major research findings

RQ1 explores the extent of discipline specificity in the EAP classrooms observed as evidenced by the relative proportion of discipline-specific content, language and general language coverage. The study has found that an overall high degree of discipline specificity was maintained with discipline-specific content focus taking up being emphasised most strongly.

RQ2a is concerned with the questioning and feedback techniques in the discipline-specific EAP classroom used to open up classroom dialogue for whole-class teaching. It was found that with regards to questioning techniques, open questions featured more prominently than closed questions with a 58% prevalence, which is comparatively higher than other schooling contexts as well as content area university tutorials (Smith 2004 et al, Hardman J 2016b).

In relation to RQ2b, student responses were also of a more elaborated nature in being longer in the EAP classrooms examined with a mean value of 8.6 words, A higher percentage of elaborated responses of over 30% was found, which is not matched by previous studies. This was found to be a result of more extensive open question use noted in RQ2a.

With regards to RQ2c, the study indicates that teacher acknowledgements and teacher comments were the most pervasive of all types of follow-up moves. It was also found that teacher probes were used to ask students for further elaboration or expansion of responses usually in the form of Teacher Expand Questions (TEQs). Two of the EAP teachers were found to be adept at using such with the exception of T2. Teacher 1 was found to be using Teacher Revoice questions (TRQs) to elicit further information about or attempt verification of disciplinary knowledge. In line with previous studies such as Smith et al. (2004), uptake was used sparsely but

transcript evidence pointing to some rare attempts to maintain focus and propel critical insights.

5.2 Implications of the study

The study raises a few important implications relating to ongoing teacher development effort as well as classroom pedagogical interventions. Firstly, teachers could very well employ prescribed course notes and other learning materials in delivering discipline-specific EAP modules but the study indicates a need to examine the classroom interaction strategies that would make such efforts fruitful. Specifically, it is pivotal that the connection between communicative dynamics and the effectiveness in ensuring active and critical thinking on the part of learners to enhance the relevance of their EAP learning to their specialist area. Secondly, in programmes where students are working on projects or assignments about which the discipline-specific teacher on a topic chosen by students involving content knowledge not tackled by the EAP practitioner on the teaching programme, as is the case with many EAP modules (especially adjunct ones), an open invitation to share progress of work and core disciplinary concepts will ensure sound communication is maintained to facilitate understanding and adequate reflection on audience needs and expectations on the part of learners. This would enhance the quality of learning and validity of assessment. Thirdly, while it may not be feasible or advisable for practitioners to engage in extensive knowledge, developing classroom communicative competence will make it possible for them to fruitfully address learner needs although the importance of background research and where possible, communication with content area specialists should nevertheless still be emphasised. This could be achieved through self-reflection and the development of self-observation or other developmental instruments so as to help practitioners become aware of their classroom interaction behaviour which leads to the building of the essential repertoire of discourse strategies to be employed in the course of EAP teaching.

5.3 Limitations of the study

There are several limitations to the present study, which are hereby acknowledged. Firstly, the study was a small-scale one and only examined a small number of EAP practitioners. Although quite a number of available number of teachers expressed

interest, time constraints, scheduling conflicts as well as the scope of the project made it impossible for the researcher to look at a large number of classes and teachers.

The second limitation relates to the use of audio equipment which may have caused the students to become conscious of the fact that they were being observed in class. As one of the teachers mentioned in the interview, the observational visit to her classroom had a notable impact on the willingness of the students to participate in class and they appeared to be more reserved than usual. This was inevitable given the need for the audience to be informed of the fact that they were being recorded, as per research ethics requirements.

A third limitation was that despite the two-week interval taken to compile interview scripts for stimulated recall, this proved difficult given the researcher's own teaching commitments and time needed for careful analysis. Most of the time, episodes were chosen without adequate coding effort based on some identifiable features such as ambiguity surrounding open/closed questions or obvious attempts to take a more controlled approach to the questioning and feedback techniques adopted in a given part of the observed lesson. This was due mainly to the time frame of the dissertation assessment as well as the need to prevent delays in conducting interviews.

5.4 Suggestions for further research

Owing to the scope of this study, a full presentation of adequate data to match questioning and feedback techniques to specific areas of pedagogical focus (discipline-specific content and language, for instance) was impossible. Therefore, it is recommended a more in-depth examination of classroom interaction (questioning and feedback) techniques in relation to specific areas of pedagogical focus be attempted. A larger scale study looking at postgraduate EAP courses would be useful in revealing techniques used to scaffold disciplinary communication in research writing. Also important would be a project aiming for an in-depth exploration of EAP teacher beliefs and cognitions and their relationship with classroom interaction practices. This would inform the way EAP teachers' professional development needs as well as how they may be supported.

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List of Appendices

<u>**Appendix 1: Feedback techniques and descriptions**</u>

<u>Techniques</u>	<u>Descriptions</u>
Initiation Moves (I)	
Open questions (OQ)	An open question for eliciting students' views without prescribed answers or a verbal answer with more than one possibility
Closed questions (CQ)	A closed question for whereby only a single answer known to teacher is acceptable
Checks (Ch)	Questions used to check if students can understand or hear what is said in class
Response Moves (R)	
Brief Answers (BA)	Students' answers of a length equal to or less than 10 words
Elaborated Answers (EA)	Students' answers of a length equal to or more than 11 words
Follow-up moves (F)	
Teacher acknowledgement/rejection (TA)	Teacher accepts (or rejects) a student's contribution (e.g. nod, repeat answer, 'yes', 'ok', 'thank you', 'not quite the answer', 'incorrect')
Teacher praise (TP)	Teacher praises a student's contribution 'well done', 'good', brilliant'
Teacher comment (TC)	Teacher remarks, summarises, reformulates, builds on and/or transforms a student's contribution
Teacher Re-direct Questions (TRQ)	Teacher redirects the same (preceding) question to a different student
Teacher Add-On Questions (TAO) - Uptake	Teacher asks students to add on to another student's contribution e.g. 'Can anyone add on to …?', 'Can anyone follow on from…?', 'Any comments on that?')
Teacher Challenge Questions (TCQ) - Uptake	Teacher provides a challenge or a counter-example (e.g. 'Does it always work that way?', 'What if…?', 'Is that always true?') or asks why
Teacher Expand Questions (TEQ) - Probe	Teacher stays with the student and asks to say more (e.g. 'What do you mean by that?', 'Can you put that in

	another way?', 'Can you give an example?') and or simply asks "why" for further elaboration
Teacher Revoice Questions (TRQ) - Probe	Teacher verifies his/her understanding of a student's contribution e.g. 'So, are you saying…?', 'Then I guess you think…')
Teacher Modify Questions (TM) - Probe	Teacher simply rephrasing the question to invite students to to think further about a given matter being discussed

Reference: Hardman, J. 2016a, Hardman, J. 2016b

	T1		T2		T3	
Target Discipline	Computer Science		Architecture		Modern Languages and Cultures	
	Turns	Topics	Turns	Topics	Turns	Topics
Themes of turns with a discipline-specific content focus	8-38	Research project preliminary results	5-9 *, 13-17*	Features of building for descriptive analysis	S1/1-11	Corruptions in colonial admin, checks and balances
	194-214	Quality of scenario description in discussion section	17*-23	Criteria for judging buildings	S1/13-39*	Corruption among officials in the early colonial days and the establishment of ICAC
	215-219	Problems encountered while conducting research	28-38	Focus of written building review		
					S2/13-38	Origins of the HK Textiles industry (lead-in discussion)
			60-75	Thematic or conceptual focus of building review text	S2/41-60	Academic arguments relating to the contributions of various ethnic groups to the growth of the HK textiles industry
			147-151	View / stance of architectural critique		
				Key principles		

			152-155	of building design		
Themes of turns with a discipline-specific language focus	63-78 (M), 87-92 (M)	Tenses for reporting of results	41-47	Organisational pattern of building review articles	S1/39*-41	Language for expressing deterministic causality
			49-57	Descriptive language use in building reviews	S2/1-13	Functions of rebuttal in the bibliographic essay genre
	152-164	Use of evaluative adjective in computer science discussion	129-135*	Architectural descriptive language	S2/39-43	Differences between summarising and paraphrasing
			135*-147	Metaphoric language use in arch context	S2/60-62	Rebuttal language use
			155-159	Architectural use of metaphor		
Themes of turns with a non-discipline-specific language focus	92-124	Hedging in general	* 9-13	Symbolic language use		
			76-124	Metaphoric language use		
			125-128	Simile language		

Appendix 3: Instances of re-initiations (RI) in Teacher 2's lesson

Turn	Speaker	Content
91	T	Okay, can you give me some examples, for example body parts, okay, can you look at my body here?...(laughter) I don't mind, do you looking at me?...**Can you name some part in my body that maybe described in architecture? (RI)** (slight laughter) Yes? **You must have a very good answer there...Just look at me...body parts, for example? (RI)**
92	S	Arms
93	T	Arms, my arms, okay. One arm of the building, the other arm for example? Meaning one...section and the other one. **What else? (RI)**
94	S	Skin
95	T	Skin, the facade, the skin.
96	S	Bones
97	T	The bones! Yes, the framework, the spine, to talk about the, err...the structure, okay. **What else? (RI) Can the building has a heart? (RI)** Yeah, the heart of the building, or the heart of the city. **What else? (RI)**
98	S	Eyes

Appendix 4: Stimulated Recall Interview Script - Teacher 3

1. How far / to what extent do you see your Arts EAP classroom (countries/cultures) as an occasion where there's an exchange of expertise going on, i.e., you are the language specialist and the students make learning effective by contributing some content knowledge from the humanities?

2. The course notes (session materials) present some elements that are specific to your students' assessment and learning needs on this course as well as. How much do you think as a teacher, you need to encourage your students to think beyond the materials and relate the course to their learning on the BA language and cultural studies programme?

3. As between knowing how to approach the given task in the booklet and thinking about their discipline while sometimes not sticking to what's relevant to the lesson, what would be your priority? What underlies your thinking process or anything that promoted you to engage in this dialogue with your students?

Extract 1
File source: 22:36 - 27:24

T [22:36] Okay, so the first question is: according to the author, looking at the Peter Fitzroy Godber case, what's the colonial hk government to do? What did the government do because of this case?

St 6 [22:52] What's question about is indicate here that government have been [pause]...to confront question about the integrity that previously had been ignored.

T [23:09] That's right. Because of this case, this case raised the *ques*tion about integrity, and corruption, in the colonial administration. It raised a very...um...important case. Ah, why did the police officers make plans to migrate to Canada? Why did they want to go to Canada?

St 8 [23:31] Because they are afraid that the Chinese government would take revenge, because they were corrupted.

T [23:40] Yeah that's right. So they...ummm...they were afraid for their own safety...right...um...yeah because umm they feared that the colonial government might collapse...abandon HK...so...their safety was shaking. Okay. good. Why did these police officers tell the Canadian government how much money they had? Why did they have to present?

St 18 [24:07] Because they need to apply for immigration, and they need to show their asset [T: yeah what do you mean they needed to show their asset?] they need to have enough asset.

T [24:17] Yeah...very good...yeah...so they need to have, they need to prove that they had enough money to support themselves before they immigrated to Canada, so that's why they need to present...um...how much money they had... Umm... how did the HK special branch find out about this? They told the Canadian government. How did the HK government found out about this asset?

St 9 [24:43] It's because the Canadian government had...had forwarded the administration form back to the HK special branch... and ahh...the HK special branch could investigate um the police officer's...asset.

T [24:56] Okay...Yeah...so *why* did the Canadian government send all these application information to HK? [silent 4-5 seconds] was there any previous...agreement about this…

St 9 [25:11] Umm...it's because of the security liaison between the Commonwealth Law Enforcement Agencies.

T [25:17] Yeah...very good. Very good. So there *was* a previous...umm...it was previously agreed through...what was it called? Um...in accordance with Commonwealth Law Enforcement Protocols, very good. So...um...when they applied for immigration in Canada, all information was sent back to HK, so the HK government found out about this. And rather permission of Charles Sutcliffe...able to prioritise the anti-corruption campaign of the HK police force…[silence] how was he able to...enforce this?

St 6 [26:04] "quote the signed state... statements of officers who claimed to have"...assigned, excluded earning of his XXX career.

T [26:18] Um, okay, but um, why...why...*why* was he able to say that this is the top priority?

St 2 [26:25] 'Coz HK Police Force organisation is on a paramilitary lines with strong central command structure.

T [26:38] Ok (silence 2 second)...so yes... there are different things they need to take...take care of in their agenda...but why were they able to prioritise...this case...about anti-corruption campaign? [silence 6 seconds] is the corruption, was the corruption, evident? And how was it evident?

St 17 [27:15] cos...um..the HK government had to the application form...you know...of the... that was sort of evidence...

T [27:24] Very good...the HK government had the evidence of the application form of the immigration...that was...that was the proof, that there is corruption going on.

Extract 2
File source: Front 6 NOV 9:55 - 12:11

[9:55] Right, I have told you so many times, this is not an argumentative essay, you are not arguing for your stance, okay? In an argumentative essay, you will need to follow the advocacy conventions, so do you still need a rebuttal? [silence] [S: yes, because it's covered in this topic? haha] Yes yes, then how? And why do I need a rebuttal in an

argumentative essay? And how would you, how would you use a rebuttal in an argumentative essay?

St 1 [10:30] Maybe in the response section...or to demonstrate understanding, and integration of the source...I use...

T [10:44] demonstrate to your understanding of the source of the idea as a rebuttal?

St 1 [10:47] maybe I disagree with the author, or find some logic is not clear?

T [10:57] So do you need to present the source of idea that you disagree with? [S: yea] Why is that? [S: ahhh...(long pause)] Can anyone help her?

St 4 [11:24] It is a way to show that you are working with the text…[T: yes, right] and you are interacting with the information.

T [11:30] Yes, correct. Very good. So yes... it is a way to show that you are engaged with the text, you are critically engaging with the text. Right. And also the way to show your broad knowledge of the topic, and you are the expert on the topic. Not me, you are. So you need to show that you understand your topic, you know our topic, and rebuttal is a way to doing that. But but it's slightly different though...than the argumentative style of rebuttal...k...So let's get on to that one today. So today's focus is to um the outcome of the lesson

Extract 3
File source: Front 6 NOV 15:22 - 20:42

T [15:22] So today's text is about...um...textile industry in HK. Do you know these people? Henry Tang? James Tien? Tung Chee Hua? Huh? Yes? Are they famous people? [S: yea] who are they? [S: politician] They are politicians, okay. Do they have anything in common?

St 13 [16:02] They are pro-establishment.

T [16:06] Okay, they are pro-establishment politicians? Okay, anything else?

St 3 [16:18] Not sure James Tien is pro-establishment.

T [16:21] Okay, James Tien may not be. [S: His brother is, hahaha] Ah ha. You wanna say something?

St 5 [16:33] They all came from, I don't know, they are...but they really...really came from HK, although they are Hong Kong but they're...but they're really from Shanghai

T [16:45]: Very good, very good...you hit the jackpot! [CHUCKLES]... Yeah... What they are in common is that they are originally from Shanghai industrial families. That's what they have in common, okay? What about question 2? During the colonial era, what kind of business kept dominating the local economy? What do the British people or the local Cantonese people, or Shanghai people dominating? [silence for 3 seconds] Business in HK? [silence for 2-3 seconds] maybe we can specify the industry, what kind of industry, which industry was marching in HK during the colonial era? [silence for 7 seconds] if you look at the following questions, you may get an idea. [St 1: textile?] Yea, so the textile industry was marching in HK during the colonial era. Okay. So which ethnic group does people, were involved in this business? British people? Local Cantonese people? Chiu Chow people? Or the Shanghai people?

St 12 [18:10] Shanghai people. [T: Shanghai people? Yea.] They brought in capitals, and ship building...skills labour from Shanghai

T [18:28] Yeah...Okay...do we agree? We'll find out later. Okay, question number 3. Is textile manufacturing important in HK...now? It's virtually non-existent right? What about in the past in the colonial era?

[silence for 5 seconds]
St 2 [18:51] yeah...it was important.
T [18:55] Yeah it was very important...Okay. What about this question? Before the handover of HK in 1997, the Chinese government said the HK people would need the HKSAR. So what does this statement reflected? It's true in the election of the first executive. Who was the first executive? [St Tung Chee Hua] From Shanghai. Okay, so what what would you say about this? [St hum...] um, frown face [Slight laughters] okay, um...a different question here. Difference between paraphrasing and summarising. As you did it, when we covered the summary, we covered about this. Similarities? Any similarities?
St 4[19:54] They both condense the content. [T: condense always? Paraphrase?] Yes, depending on how you construct the paragraph.
T [20:12] Yea, that's right, that's right. [SILENCE] That might actually be the difference. For summary, the content needs to be condensed, and packed, right. So you have to boil down to the important points. While paraphrasing depends...like what you said, depends on how you structure the sentence which could actually be longer than the original text. You are just choosing your own words, or you know sentence structure...

4.What underlies your decision to engage in a dialogue with students - or being more "conversational", "open-ended" or "controlled", as you might have noticed from the three clips above, which present the more open-ended examples, it seems, from the lesson I observed?

Appendix 7: Teacher 1 Lesson Transcript

Teacher 1

T [4:45] Okay so today we are going to…[[oh you are guys are really crawling in at the last moment here]] That's ok. That's ok.

ADMIN

T [5:32 - 5:33] So doing okay? Getting busy?
St [5:35] Yeah
T [5:34-5:36] That's good. Not really
T [5:38-6:00]   So as you can see today we're gonna be looking at...at the results and discussion chapter. Okay? I'll go through the results and discussion chapter the different components - language features. You know...how we use when we do. And ummm...I'll also take some time to go through the progress report so we can a Q and A session so guys know what to expect through the progress report.
SILENCE [6:00-6:05]
T [6:05-6:17] Thanks guys. If you like I can...I can collect that [referring to a document]...thank you (rising tone)...thank you (rising tone). So [name] really appreciates your help. Awesome thanks.
SILENCE AND CHATTER [6:17-6:]
T [6:29-7:45] Okay! Today we're gonna be looking at the results and discussion chapter. Okay that'll include the components...you know, the components you should cover in this chapter. Language features like tense use, okay. Ahmm...we'll also be looking at articulating the difficulties encountered, which is also an important part of the chapter. Okay? This is applicable … definitely I think later on when you really do get some results in so maybe...in the coming few months or next semester I think you'll really be hopefully reviewing this lecture for your...you know for that chapter...you know when you're finalising things and analysing your results and all that, okay? Ahh but yeah this class is in the first semester so we're covering it now...Ahh after the lecture we'll do a kind of progress report 1 Q and A. The due date is Oct 24th that's after the reading week...yeah we have this week, reading week and a few days after that cos it...cos Oct 24th is a Wednesday...yeah so you have some time to really be able to...hopefully you started something like a introduction chapter or hopefully you have some content...that you...you kind of have a better sense of for doing your project plan, yeah (low voice). Okay? (rising tone) Anyways we will cover this later…(pause and clears throat)
T [7:48-7:51] Results and discussion. Do any of you have any results?
Wait time
T [7:54-8:11] Yeah any any results... have you analysed anything? It's kind of early right it's kind of early for me to ask you that okay, how about this? Ummm...have you played around with anything? Have you tried this, tried that? Did you quickly test this, test that? Anything? (volume drops)...{Student name - J}? Yeah?
St J [8:12-]: Yeah I used the natural language processing package (rising tone) and...I've already tried to ahh...scratch the website and put all the raw text into the package and see…
T [8:23] - [alright...okay] echoing interruption
St J [8:23-8:24] the sample result
T [8:24-8:25] Is it...is it the package you're gonna be using? (rising tone)

St J [8:25-8:26] Yeah…

T [8:26-8:31] Of course...yeah...okay so you've already played around with something...you've already...even if you've...have you analysed it or not really? You just did a…

St J [8:31- 8:37] Ahh...ahh it's not like analysing because I just used the existing method. Existing...so…function

T [8:38 - 8:55] Right that's that's still good that you kind of tried it and you tinkered with it. Anyone else? Played around with something? Tried a little line of code here and there?...Read some journal articles or some previous research?

SILENCE [8:55 - 8:58]

T [8:58-8:59] Woody…{Student name - P}?

P [9:00- 9:01] I haven't done anything yet

T [9:00-9:02] Not yet? Hehe

St C [9:04-9:22]: I tried to ahhh what...what does the browser has done when I ahhh...go into get some data from the certain website and I try to explore whether it's ahh...whether the results are usable in my project

T [9:23- 9:26] Ahh ok...so which browser is that? Chrome? Or…?

St [9:26- 9:27] Ummm safari.

T [9:27] Safari?

St [9:27] Yeah

T [9:29 - 9:31] Okay so playing around there? Anything else?

SILENCE [9:31-9:34]

T [9:34 - 9:43] How about this? Any errors or glitches or…? You tried some coding...something broke and it didn't work? Any any of these kind of problems come up?

SILENCE [9:34-9:46]

T [9:46-9:49]: {Student K} (Student shoke head) Not really? No? (rising tone, sounding surprised) {Student F}?

St F [9:50-10:]: Ahhh ahhh...I am dealing...I was did...I am doing ahhh...a super resolution in ah…I've tri..ded..(T 9:55 Right) to use some of the code using XX...like you can not always run it successfully so (T 10:10 uh ok) you have to try...er...to read the...umm...instruction very carefully to see any dep...dependency is in charge...so it's take some time to…

T [10:21-10:27] [INTERRUPT] I see...so you're not...you're not going to use an existing package right...are you gonna make your own or are you improving?

St F [10:28- 10:42] Yeah yeah so the first step will be to use other...use other persons to results to...replicate their models and replicate their result and the next step will be errr...us creating our own models

T [10:42-10:44] umm hmm...umm hmm...based or inspired by…?

St P [10:44] Yeah

T [10:44-10:52] So another question then ummm...where did you get these ahh...packages from? Are they...just...do they just exist online or are they from previous students or…?

St P [10:53-11:03] Ahhh they exist online so they published the papers and at the same time they published their code in...in like ahhh...a gib(?) hub or…

T [11:03 - 11:04] Ok so you have easy access…

S [11:05] Yeah

T [11:05 - 11:22] Okay. Anyone else? Yeah so some difficulty with the package ummm that you got...any any other difficulties or glitches or errors? {Student S} How about you? (Student shakes head) Nothing really no? {Student P}

St P [11:23 - 11:25] Not yet still trying to write the codes of provide by the author of the conference paper.

T [11:26 -] Yeah

St P [11:27- 11:43] So these codes are easily accessible from the gib hub...from...ahhh from...a few days ago we are beginning to write...ahh ours...not really uhh...not really real errors we can report because we are still beginning to write it

T [11:43 - 11:52] Okay so not really any errors...but...already what you're telling me is umm some progress...yeah some sort of tinkering here and there...yeah...okay

SILENCE [11:52 - 11:55]

T [11:55 - 14:10] So for the results and the discussion...chapter okay your audience will not interpret results themselves...okay...don't rely on the audience to think for themselves basically...it's up to you to show the readers your results. For example, you have date...you have a product like a finished product or you've improved something you've made something more efficient...okay...and you need to discuss these results...okay...and that means interpreting okay...interpreting the data what does this mean. Is this an improving trend? Okay evaluation...how well has the product performed?...Right? Does it mean...like...the standards that you wanted? Okay...any other important details that the readers show know about...alright...ahmm...so here's how you discuss the results. Remember our three steps? Okay? So step one introduce the results...okay step two describe the results...step three offer comments and details. For example, interpretation or evaluation of these results. Okay? These steps can be...maybe repeated throughout your chapter right because you might be talking about different components or different areas or ahh...different tests you've done. Okay? The results can be introduced ahhmm...either throoough...like...text...okay...you just write it or maybe you show a figure like err this is the finished...this is the screetch out of the finished app or something. Maybe an illustration or a graph…like a stock...like your stock predictions or something...or even a table...right? Okay? Here when I say...when I wrote results here by results I mean...data or component or a module or a feature...or...product...or whatever it is you're actually working on that you wanna present...yeah...so in your writing…[pointing to something on screen]...looks familiar...you've seen this. Introduce, describe, offer comments and details on the results. Okay? (rising tone) So let's see this...ahhh...in an example...okay? So again we're looking at blueprint...okay...so we're gonna look at the blueprint...ahh...kind of results...okay...commenting on the results on...on page 81. I think you have the page number right?

SILENCE [14:10 - 14:22]

T [14:23 - 14:29] You guys are very keen on your little phones. Yeah. Is it a bit too small? (Student shakes head) No?...

T [14:31 - 14:59] So on page 81 okay take a read through the blueprint text. This looks familiar, doesn't it? We've seen that...we've seen that graph...thing before...right...that figure before. So now they're gonna explain it for us...we can finally understand it cos we saw it last week as a preview. See if you can identify these three steps in their writing. Again, it might be repeated...you might see it in several places. Steps 1 and 2 might not necessarily...follow this order it might be step 2 and then step 1...that's totally fine as well.

SILENCE [14:59 - 15:29]

T [15:30 - 15:33] [Walking out monitoring] Smart...good idea...hey! Charlie…

SILENCE AND TASK TIME [15:33 - 17:22]

T [17:22 - 17:30] So this might look familiar from our last week...it's our preview of it and now they're gonna explain it to us...see what it means

SILENCE AND TASK TIME [17:30 - 18:48]

T [18:48 - 19:00] Okay so continue reading...and wait for your partner to continue reading. If you've finished reading...wait for your partner to finish up as well. Both of you have finished? Maybe you can discuss how you've found these three components in the...in the text

SILENCE AND TASK TIME AND ST COMMUNICATION

T [19:45 - 19:51] You've finished? (inaudible - check other recordings) You think the text help you understand the visual a little better?

St J [19:51]: Yeah

T [19:52 - 19:54]: of course it's still a little confusing

St J [19:56 - 20:02]: but I'm confused with like they introduce result or describe the result like for the first sentence I understand is that kind of introduction or description...?

T [20:03 - 20:07]: Here's quick hint. Usually, if you see something like see figure 3.

St J [20:08 - 20:08]: Oh this...easy step one

T [20:09 - 20:32] So that's introducing result cos I mean well, figure 3 is not just any random figure it's actually leading to the result...yeah...so there's an easy way to do step one…(5 sec pause)...again, you might see the order...makes the two sentences step one…

[LOTS OF ST-ST DISCUSS'N IN B/G]

T [20:44 - 20:50] You think the text helps you understand the visuals a little more? Or is this still confusing?

St C [20:53 - 20:55]: Confuses me cos the numbers...

T [20:55] The numbers?

St C [20:55 - 20:57] like P equals...blah blah

T [20:57 - 21:32]: Right...let's ahh...that's for like...like... statistical analysis. This is a reserve test case scenario so they have a number of users that's why they have the statistics...we're not familiar with the number P...and all that...maybe they...could have explained it just a little bit more but other researchers that are familiar with this text they'll see and go oh P equals 0.14 that's interesting.

SILENCE AND TASK TIME CONTINUES

T [21:36 - 21:39] How about the ahh...Any...any luck with the three components?

SILENCE

T [21:47 - 22:13] Okay...so again a quick tip...you see that section that says see figure 3? Yeah that's an easy "Introduce result"...see figure 3 because figure 3 is kind of like a summary it's a visual of the result...yeah, so...then...again, describe the results...step two that might come before...or it might come after step one...it doesn't have to follow the exact order.

TASK TIME CONTINUES

T [22:33 - 23:18] Okay? Ahhhmm...shall we see...the...answers?...Okay so first, these are the locations where you might have them...okay, just to note that...ahmm...this can be like...a reference kind of method so this could be something that would have been in the methodology. Okay? Ahmm...if you remember, I think one of our comments from last week was ahhmm...ahhh the...the...the...details about how to judge the code quality...they've included it here. Yeah...so this could have been the methodology...now we know about it here. Okay? Ummm...you can see the steps. Okay? So step one and two. Okay? One see figure three, two two three...okay?

SILENCE [23:19 - 23:22]

T [23:22 - 24:58] Okay? You'll notice...ahmmm...wait, well first of all is this errr...different from what you had in mind? Or...does it kind of make sense? Okay? So...step one...if we go back to step one introduce the result. Again...it's as easy as including it as a text or a figure or an illustration graph table. So that's an easy way to do step one. Just have it.

Right? Umm...But we're not finished yet...we also need to describe and offer comments. Okay? So step two. Describing so they're kind of describing the details that we see in the figure...umm...some statistical analyses that...I'm not that familiar with...ummm...maybe a little bit...but I think you guys are probably not that familiar with it maybe? (some student nod) Yeah…this is more like masters level statistical analysis...ummm...step three (rising tone) remember what I said about the key words there. Yeah? Ahh...interpretation, evaluation, other important details. We can see in step three and I've...I've underlined it in green they're trying to explain why this is the case why that is the case...we can see here...this suggests that lowering the time required da da da...or okay? So they're explaining why this happened...we hypothesise this is because...the example-centric view blah blah blah...okay? We're searching for the URL loader etc...okay? Umm...so they're offering these comments...this evaluation and these are the details here. Okay?

SILENCE / PAUSE [24:58 - 25:01]

T [25:02 - 25:36] one thing I'd like to point out...which, will be our next topic...okay so here they say this suggests that...okay this suggests that lowering the time required to search for so like copying examples will speed development...this suggests...they don't say this IS...alright...is there a difference? This suggests or This is because…? Can you...can you see a difference? This suggests that. This is because of...is there a difference there? {Student W}

Student W [25:37 - 25:38] Yeah this suggests that...not really sure?

T [25:38 - 28:32]: Not really sure? So some probability. Right? Some possibility there, yeah. Good. Okay? Ahhh...same with...same with here...we hypothesise this is because...what if they just said this? Cover this and this says "this is because". Would that change the meaning? (St nods) Yeah...why is that? Again, it's like a possible explanation right? Yeah. Okay? Umm...so I'll talk about that in a second. This is called hedging. Might sound familiar. Yeah. I'll cover that in a second. Okay...so these are the components that you should try and include in your results and discussion...ok? One thing I want to point out ok...steps one and two here...ahhh is...covered by these three steps. Right? Introduce, describe, offer comments. That's already refer and evaluate. Right? So that's the first two steps. We also have these other possible steps to kind of consider okay? Umm...so reference to data findings and evaluation, data findings...observations and actions already performed...something similar to methodology...but the way you're describing the results is important to repeat or show some details...Ahhh current situation...general phenomena...standard procedures...right, when you start comparing your...you know your project to the real world...to other researchers...to other standards. Okay? You can even describe features of your product. Okay? Ummm...acknowledgement of difficulties encountered. Suggestions or hypothetical situations. Okay? Umm...I've put this in...kind of...this red here to get your attention…yeah...don't forget this part. Students...what do students say...previous students have said something like this - oh but Brutus I shouldn't talk about my difficulties encountered...I don't want to show my supervisors that I made mistakes. Alright…(chuckles)...I'll address that in a second. Okay? Any questions about these components? So far...okay...considering these components, what tenses should we use to cover these components...so...you might need to recall what we looked at in the previous chapter...uhh...I've done these for you because they look familiar don't they? We saw these in...ehh...introduction and methodology. Right? Things, actions already performed...simple past. Current situation, general phenomena, standard procedures - what saw in the methodology - simple present. I've also included describing features here...you can describe features...you know...of your results...of your finished product...of your functions...you can do it in simple present. Okay? How about the others? Yeah, help me out here...reference to data and findings…

St D [28:33] : Simple Past? (rising tone)

T [28:34 - 28:38] Simple Past? Okay. Simple past? Or...anyone said something different?

SILENCE [28:38-28:42]

T [28:42 - 29:24]: Could be simple present? Yeah? I think it could be a bit of both. It depends on the...it depends on the writing style of the author. You can see simple past...you could see simple present...usually...you'll see simple present...like this...okay something like...something...like...this...ummm...right? See figure 3. Remember that's an easy way to do step one? Refer to the...refer to the result. This could be in present tense. Yeah, so there's an example of present tense there. But...there are situations where...it could be past tense...evaluation of data and findings...evaluation…

St T [29:24]: Simple Present?

T [29:25]: Woo...I heard a lot. Yeah...what do you think?

St Y [29:28]: Simple Present.

T [29:28 - 30:24]: Simple Present...okay...anyone think...something else? Could be simple present...could be simple past...okay? Umm...I think...again I think it really depends on the writer and the situation. Let's come back to here…okay? Evaluation. Okay...this suggests that...lowering the time required to search for...will speed up development...okay? So this suggests...so evaluation here they've done it in present tense...something like that...okay? We hypothesise this because...the...makes it more likely that users will choose...so yeah...THIS is because...rather than this WAS because...they said this IS because...so they've used present tense...alright...some authors might have a situation where they do it in past tense...so actually...again, it could be both...simple past...simple present...okay? Phenomena...features..acknowledgement of difficulties encountered…

St U [30:24]: Past

T [30:25 - 30:]: Past tense? Past tense? Okay…makes sense...you experience the difficulty so now you report about it...okay? There could be some special cases where you use present tense...maybe if it's an ongoing difficulty that you haven't solved yet. You can...write about it...in present tense...as well...suggestions or hypothetical situations…

St (a few responding) [30:47-30:48]

T [30:49]: What? (Chuckles)

St [30:51]: Present?

T [30:52 - 32:00]: Simple present? (Rising tone) Okay? Simple present...maybe simple future...okay there's a condition for this...okay? Simple present...maybe I should put OR PAST here...simple present or past...you've seen these two...simple present if it's an ongoing issue you're still dealing with...simple past...if you know...you're talking about the difficulty...at that time...Okay? Simple future...it could also be simple present….actually...for example if you use if...then...modal verbs such as would could should can etc...right?...so...even if we look at the blue print one...we'll see some present tense...users will choose...likely that...users will choose...we see a future tense...talking about the hypothetical situation there...ahmm...you might not remember but I mentioned...don't use "could" in your writing...alright...use "can"...right? This feature can...execute this...etc...don't use "could"...ahh...you remember why?

St P [32:01]: It's make it possible…

T [32:03 - 32:22]: It's just a possibility...yeah...so if you use "could"...right...my product COULD do this...it sounds like...yeah it COULD...if it works (chuckles)...right? Can...is ability...Could...is probability...yeah so don't use could instead of can...use CAN....okay?

SILENCE [32:22 - 32:27]

T [32:27 - 33:11]: ummm...cool...so let's see these components and...the tense use...in another example...okay...so this one's on page 82...I think 82 and 83...okay? So image-based exploration of massive online environments. Again, a familiar example...we saw

this for evaluative language...yeah (low voice)...so what I'd like you to do for this one...read through...okay? Page 82 83...see if you can label...the components...right...one through six...and ahh...see if the tense makes sense...okay? I think the text...if I'm correct...the text has already highlighted the…(drops something and says to student - I'll get it)...has highlighted the verbs for you...right? So...should make it easier…

SILENCE AND TASK TIME [33:11 - 34:29]

T [34:29 -] What are these numbers 4, 3...Is that the area … St resp)...current situation.

SILENCE [34:39 - 34:47]

T [34:48] Maybe you can think about this one again - we report experimental results - here they are.

SILENCE [34:56 - 35:17]

T [35:18 - 35:46] I think...I feel like it would go with...1. Right...it's the first it's kind of like a topic sentence "we report the results", "here they are"...it's kind of like introducing them...(St: oh ok)...isn't it? …[St pauses for 2 secs and says "yeah"]...keep...keep the XXX...maybe I'm wrong...maybe I don't remember my own answers (chuckles)...maybe you can compare with...with errrhhh...with X when you guys finish (St: ok)

SILENCE [35:47 - 36:12]

T [36:13 - 36:25] Any components that you think are a little difficult to...point out? Or to identify? Or kind of make sense as you're going through? (St: yeah it makes sense...yeah) (St twds front: reference to data file)

T [36:28 - 36:56] OK so again just...just a tip remember the three steps we saw to introduce describe comment. Alright? Introduce, describe, comment. Right? Introduce describe comment. The first...so that that might be a bit tip for you yeah. Introduce describe or introduce describe comment. So those three steps you can find in the first two categories.

SILENCE [36:56 - 37:09]

T [37:10 - 37:37] You think the components were easy to identify, C? (St seems to agree) Ish? Right? Ok Easy-ish. Ok, when you finish reading ummm maybe you can compare the components you highlighted with ummm someone sitting next to you see if you have anyyy differences or conflicts there or join a group, a little group if you like...

SILENCE [37:38 - 37:49]

T [37:50 - 38:11] Everyone's here? Cool. One two three four five six ...fifteen (T counting the number of students present and pointed at one student) you came a little late today (St: yeah) but I'll give it to you.

T [38:15 - 39:31] Ok...ummm...here you go…(chuckles) ok so I've highlighted...okay, the numbers 1 through 6 which errr are these ones so...you can also see them in the booklet. Okay? So...let's take a look. We report...okay...we report. First sentence kind of a topic sentence. Here's the results. We report. Okay an easy way to introduce the results. Alright? Okay we report experimental results. Okay? Were conducted. Step 3 there...uhh...previous...previous actions. Okay? Procedures...or...sorry not procedures...standards...or general phenomena or features or whatever. Step 4 there. There. There. There. There. Okay? And again you can see that it's present tense. Seems to consistent with ours right? Step four...one two three four. Simple...present...yeah. Has, has, is, right. [pause] any of these that ehh...you missed? Or...they're conflicting? And it's confusing? Anyone? Does it make sense? Is it clear? Yeah?

St J [39:34 - 39:48] For...the like...the first is ahhhh ten thousand. Before you say it's a current situation, (T: ahhh... looks at course notes and thinks to himself, murmuring) can we say like that it's kind of data?

T [39:48 - 41:41] Yeah, you know what...I see your point. Yeah. (Reading from course notes "Were constructed to reflect the scale and generality of online worlds") Yeah. I see your point because did they know that world? (St: yeah) Yeah. So that it could be reference or that can be just describing uhhh describing features there. Alright? So again that was step four ("The first is uhhh 10000 km 25-billion polygon…" whatever" so that's the world, the kind of landscape they built. Right? So here...that's why I put here describing features. Yeah so they're describing the features of their product in a way. And it follows the...simple present. Yeah. Alright? Good. Good catch. Yeah. [3 sec silence] Ok so the...the...first...uhh...is the first world and the second world. So you can see it as describing the features of their results. Right? Cos their...I guess they built it it's kind of their system, their kind of update. Yeah. Ok anything else? Any other comments of questions...there? Ok...so again we look at step 6...ahhh hypothetical situations. Ok...here we see could…("could make these improvements"). Probability. Yeah. Ok? So...in your FYP, something that you can do and / or you will do...use that...don't use could...because if you...are going to do something and you say could. It sounds like yeah, maybe you won't do it. You don't feel like it. (T chuckles). Alright? But this is a prediction, a probability. (Reads from notes: Could make these improvements feasible within a small number of year). Yeah. K?

[SILENCE - 10 secs]

T: [41:51 - 42:] Number 2. Evaluation okay. So evaluation of data and findings. Okay? Simple present or past. Here they've used present tense. Okay? And they're evaluating. Remember evaluative language from ahhh...last week? Right? (Reads from notes: compares favorably with the size of the original). So they're using this evaluative language showing that...uhh...you know the data...seems...to be going...in a good direction. Okay? They're evaluating it there. So 2 there. And there's another 2 here. (Reads from notes: is...is a viable approach to handling large-scale duh duh duh) Okay so again it's also evaluating...again they're kind of...uhh...approach and they're saying that...yeah it's a viable approach. Okay? They're using hedging in a way that they're nuts. Okay. They're saying (is a viable approach). They're not saying it's a great or it's the best approach. They're saying it's a viable approach. So they're keeping a neutral kind of tone. Okay? Same with here (reads from notes: compares favorably) When they're saying compares favorably, they're not saying this data shows great potential or anything like that. That's WAY too much. Alright? Instead, (compares favorably). So kind of positive, a positive but neutral and academic tone there. Any...other questions about these components? Yes, Ken?

St K [43:13-43:29] Can we say that...uhh...in the...in the last sentence in paragraph 3...paragraph 3. [T: Paragraph 3...1, 2, 3?] Yeah can we say that (reads from notes: changes of...even larger regions were processed?) ...could we [as] the description of the...of the data?

T [43:35-44:07] As the description of the?…(St J: of the graph) Oh...ok...so you mean...as...like as shown...as shown in the figure? (St T: something like that) Yeah...I think that would be great if you can...if you can link right (were processed) quickly...this procedure...if you can link it back to the graph. Right? Cos it's... it's relating to that figure...yeah? Here. (St: yeah...it's just the...the big…) Yeah the processing time...Yeah. I think, I think that'll be great...if you can...if you can add that to link it back to the figure there. Yeah. I think that's a good point that you brought up. Yeah...link it...it's okay to link it to the figure one or two times, right? You don't have to do it just once...to the same figure. Yeah...any other questions? S...so far? Okay? So...these are the main components and their tense uses. For...results and discussion chapter. Okay. Hedging. Have you heard of hedging? How many of you...how many of you were exempt from CAES1000? Exempt.

Anybody? Oh you all took CAES? Oh you're exempt? You didn't have to take CAES1000? (St: Oh no no no…) Oh...you DID take it? (St: Yeah I take it) Yeah. Anyone exempt? No? Okay. So does this sound familiar? Hedging. Good times, right? Back when you were in your first year...a little scared. What's hedging? So hedging is vocabulary that we use to show probability. Okay? To be realistic. How can we illustrate this? (Noise coming from the background) (T starts to write on the board) Okay...zero percent. Yeah. one hundred percent. Ummm...okay can you give me...can you give me another word for zero percent?

St D: Impossible.

T [43:30]: Impossible...okay. Impossible...anything else?

St B [43:35]: No.

T [45:36-] Never? (Chukles) Yeah? No?

St E [45:42] No. (Chuckles)

T [45:42 - 45:47] (Chuckles) None? Anything else?

St U [45:50] Nothing.

T [45:51- 46:02] Ummm...nothing? Yeah. Okay...Let's move to 100 percent. Pure truth here. What's another way of saying 100 percent?

St I [46:03] Must.

T [46:04 -] Must? Perhaps. Yeah. Okay.

St K [46:10] All

T [46:10-] All?

St W [46:14] Absolute.

T [46:15-46:23] Absolute. Absolute. And absolutely. Anything else?

St Y [46:24] Definitely.

T [46:25-46:32] Definitely. That's it. That's a strong one there. Definitely. Anything else?

St W2 [46:35]: Obviously. (Chuckles).

T [46:36-47:17]. Obviously. (Chuckles). Okay. so we have zero percent and some vocabulary that oh...that also refers to zero percent. Same with a hundred percent. Now your project...right, you're doing new recent project...cutting edge…a lot of new technologies that you're testing out. Chances are...you're not writing about something that's definitely zero percent and definitely a hundred percent. If you did, that'd be a very easy project, wouldn't it? Right? Chances are...your project...and your results, and your interpretations fits somewhere in the middle. Right? Can you give me some vocabulary for the middle area like fifty percent?

St X [47:18] Possibly.

T [47:18] Possibly.

St W [47:19] Might.

T [47:20-47:27] Might. Yeah. Might let's say forty eight percent there. (Sts Chuckle) Might

St D [47:28] Probably.

T [47:28] Probably.

SILENCE 5 seconds

St X [47:32] May.

St C [47:32] Should.

T [47:33-47:39] Should. Okay. So a little bit stronger. In terms of prediction. Should.

St D [47:41] Will.

T [47:41-47:53]: Will. (St coughs). Will is...uhhh...100 percent certain. You WILL finish your project on time. Good luck. (Chuckles) (Student murmurs). Anything else?

St M [47:55] Could. Would.

T [47:56-48:19]: Could. Would. Okay? So around here? (Sts chuckle) Okay...so would. Could. Yeah let's put maybe around here. Could. You COULD finish your project on time.

Good luck. (Sts chuckle). (T chuckles). How about something like this? Five percent? Unlikely?

St D [48:20] There is a chance.

T [48:21 - 50:44] There is a chance. Maybe somewhere around here? Okay. There is a chance. And...umm...sort of unlikely. Yeah. very likely. Yeah that's a strong assertion. Okay. Anyways, these are kind of subjective in a way, really. You can argue if probably is it 50 percent or 60 percent or 55 percent. The point is…you wanna show, again, you wanna show whether weak certainty or strong certainty without using here's a good one...another one for 100 percent...IS...this IS the case. Yeah...when you're interpreting, when you're interpreting your results. Use language to be realistic. With how certain you are. Here's some vocabulary that you can use...you can see verbs. Okay. Hedging verbs. Adverbs. Adjectives. Modal verbs like may could. Modal nouns "the probability". Okay? Conditional conjunctives like we've seen for hypothetical situations IF...if this theory is correct. Right? So these are different ways that you can use this vocabulary to be...ahhh...realistic...yeah. Okay so be careful when you're interpreting and evaluating and explaining reasons...why this...you know...reasons why that...alright? Okay? So hedging. Good review. Good times from CUE...okay, any questions about hedging vocabulary? Okay...ummm...let's take a look at a previous student example so this is on page 85. Okay? Read a previous student example. Okay it's their results and discussion. Do you think it is a good discussion? Con- (st coughs) Consider what we've learned so far in this lecture? And uhhh...make some improvements okay? Some constructive comments. Critique it. Okay? You can do this together with someone so uhh...Shawn if you like if can...you can join them...maybe read it first and then discuss it together after...yeah...my...my previous sub-class they really tore this one apart. (Chuckles).

[SILENT READING TIME 50:44 - 54:32]

T [54:33 - 55:05]: Okay. So...the text is not too long. Umm...so...we've finished reading it. Or you can keep reading it. If you've finished you can turn to your partner or small team. And uhh...any comments anything that we've covered so far that applies to this course? Ummm...a fun part is to just apply your fun part and questioning to this writing. And to the students' writing as well. There's also...some interesting uhhh...sentences in there....(some sts start to discuss)...

T talks to some students [55:34 - 56:05]: Do you think it's...it's uhhh...it's not a successful attempt to illustrate what they wanted to illustrate…? (St resp inaudible but seems to suggest agreement through the slightly extended response) Exactly. Yeah...ahhh...What I get is that they're trying to illustrate the ups and downs of newsheadlines and the ranking per day and uhh...but it's too complicated to sit there and look at line by line...ummm...that's what I think.

[Sts allowed to discuss on their own 56:05 - 56:32]

T to some students [56:32-56:34] Any comments? Or anything kind of like...strange?

St [56:44- 56:52] Because it…. [inaudible]

T [56:52 - 56:59] Do you think it's necessary to have all of those...each line there's different kind of news articles I guess...do you think it's necessary to show all of them to prove one...one figure? (St nods) Yeah...doesn't make it very clever.

[Some other sts suggest sentence structure too complicated]

St: [inaudible response]

T [57:03 -] Right.

St: [inaudible response]

T [57:08 -58:11] Yeah...it's a bit random isn't it? Yeah maybe...yeah's that's a good idea. Do you think they can add...or stick to one of two main categories rather than all the random news articles? (St agrees) Here's here's...my question...something that I can't

figure out: do you see that part where it says elasticity? Or something like that? Elastic? Ranking yeah...something something more...elastic there. Yeah... Towards the end there something something. More elastic. Actually I can't really figure out…

T turns to anotehr group [58:12 - 59:51] Has the writing confused you guys? A little bit? (Sts: yes) Here's my question: ummm so how come elastic...something something more elastic...where was the more elastic? I didn't understand that...Another thing I didn't understand is the last sentence completely...I didn't understand what he means...flexible or switching positions…(st says he thinks flexible...that's what it means in Chinese) Okay...So they mean so they mean like [inaudible]...but I see the case for both figures. For Google news and their rankings it's kind of both true there. uhhh...I guess...I mean...it seems similar...maybe it's on here...but then how about the others? The others? They're moving around fine. So interpretation? (St tries to respond) Yeah.

T turns to yet another group [59:53]: What are you guys' thought? Anything NOT confusing?

Hmmm?

St F [1:00:02-] The methodology is not that confusing.

T [1:00:03 -] Methodology is not? uhh...or?

St F [1:00:07-] Probably the first paragraph is not.

T [1:00:11 -] Yeah.

St F [1:00:12-] Probably it's just the first paragraph is not coherent...the second paragraph is [inaudible]...also the graph...

T [1:00:15 - 1:00:32] So you kind of...you kind of understand what they try to do...what I understand is that they try to compare their ranking to Google news. That's as far as I got. But then what they interpreted these results...it's a little bit ahhh…confusing isn't it...

St [1:00:33 - 1:00:50] I think what they're going to...they're trying to prove that they're perhaps their algorithm...network...can show better trends of searching those...ehhh searching the topics…

T [1:00:51- 1:00:59] To be honest people thought the our ranking one and google news one they both show good ranking positions…

T [1:01:01-1:02:02] What do you guys think?

[SILENCE 4 seconds]

Sts [1:01:06 -] uhhh…

T [1:01:07 -] Anything you've been able to figure out? Go head…

St T [1:01:10 - 1:01:12] The description of the graph is misleading.

St T2 [1:01:12 - 1:01:17] Yeah. The caption of the figure and the first paragraph…

T [1:01:18 -] I'm glad you brought that up.

St T2 [1:01:23 - 1:01:36] In the caption said that uhh...I don't know what is this one...sixty and forty something topics in the graph but in the description of the data collection, it's mentioned that only 23 topics are included.

T [1:01:37 - 1:02:33] Yeah. Okay. So...so uhh...forty one topics...the total number of topics got up to 66 and almost 41 for google news but in the first sentence they're only talking about 23 topics. Okay...ahh...24 hours? By 6:30 pm or 6:30 am? So there's a bit of a mismatch between the text itself and like the timing, the number of topics and the figure. Yeah the figure has more topics and it's a different time frame. So here's an example where the figure isn't that well integrated. With the text I don't know...maybe they changed and they forgot to edit it...yeah they were they were working on it too late...3 am...they forgot to change...change it...okay?

T resume to whole class mode [1:02:34 -] What do you guys think of the readability of the figure?

St [1:02:39] ummm...very messy

T [1:02:41] Very?

St E [1:02:42] messy.

T [1:02:42 - 1:04:48] Very messy? Yeah? (Chuckles) Okay? I like what you guys said uhhh...uhhh...you said that uhh...you know they have these random categories like gaming or dinosaur find..okay you know they have these different...what if they focused on a particular category of news like gaming news? Or uhh...archeology news? Or...things like that...Yeah tech...tech news...instead of putting them all...all in one. Yeah like...I like you guys mentioned that. They could've been more specific and precise with their figures. Yeah...okay...some other things to highlight? Here. Okay...so first of all we COULD observe okay...we CAN observe...we COULD observe...if we really wanted to but we don't want to so we're not gonna observe anything...okay? They give us some brief context which as we mentioned seems to contradict the figure caption. Okay? Figure. Okay? Missing the figure number. Is it still figure 16? I assume it is? Step one. Step two. Step two describe the data. Step three offer comments on the data. Great they've done the three steps for us introduce describe comment. Okay? Ummm...they have some hedging vocabulary so that's done well, isn't it? "Seem to"...or "it can be explained"... "It can be explained by the fact that…" Okay. Ummm...I have a...I have a question about this…"Although the figure cannot say which one is better"...what does better mean? Which one is better? Now...what does that mean do you think? Is that referring to the writing quality? Is that referring to the more truthful...is that referring to the one that's not fake news...what does (chuckles) what does better mean? I'm not sure...ahhmmm...more...yeah?

St W1 [1:04:48 - 1:04:58] Maybe he said uhh...more stable is good or...fluctuates a lot…

T [1:04:58-1:05:06] Which one is better? Yeah...is that if it fluctuates or is that if it stays stable? I don't know which one is better...actually...okay…

St W2 [1:05:06-1:05:07] That's what he means.

T [1:05:08 - 1:06:07] Yeah so he means referring to the position, okay. Okay. I guess...so that could be...that could be made a little bit clearer in the writing. Yeah...but uhh...good good good point there. Ummm...more...more elastic? I was asking some of you guys around about what means by elastic. So I guess we mean...elastic means it's moving around...and it's not staying in one place. Flexible, let's say? Flexible ranking...or...mobile ranking something like that. Yeah…(sighs)...(clears throat)...here's my final question - "it might indicate the difference between topic, topic initiated...by the media and by the pub..the public" "The difference between topic initiated by the media and by the public" What does that mean? I guess the media...okay this...this...the graph is the media isn't it? This is the media. Are they initiating their own ranking? What's what's the…

St W2 [1:06:08] Google news takes from...uhhh...some media...newspaper…

T [1:06:14] Yeah newspapers or popular blogs…

St W2 [1:06:16 - 1:06:21] But their...their ranking is based on twitter... by the public

T [1:06:22 - 1:07:39] Their ranking is based on twitter...okay... I still think the media like news headlines or blogs or the parts that Google gets...I feel like that's still the public (St W2: okay). Yeah maybe they could have said by twitter users. Could that be more precise...yeah...let's...I think that's a good explanation though...yeah...I didn't think about that...so the difference between Google sources and Twitter sources...yeah...that could have been clearer couldn't it...cos they're both public...anyway...okay...Any other comments about this...text...so far? Okay? Yeah...so I think you can see how okay there were some things that were well done. Yeah they didn't skip the lecture they included the three steps they included some hedging...but the logic...the evaluation...that quality can be a little better...I think...uhh..okay...let's take a 5 minute break...good time to take a 5

minute break now and when we come we'll talk about the difficulties encountered so it's a 11:41 now so come back at 11:45, 11:46

T [1:12:33-1:12:56] Ok. Let's...come back...ok so we'll...will uhh...finish earlier than...than...uhh...I think we'll finish earlier than uhh...past...the twenty past...okay? I just wanna cover articulating difficulties and limitations and then the progress report....Okay?
T [1:12:57-1:14:58] Articulating difficulties and limitations...okay...actually I think sometimes they can be intervened...interchangeable...difficulties encountered...experience...limitations...ummm...you can think of them like this...okay...difficulties that you encountered during your work. Limitations can be seen limitations of the study in terms of scope, in terms of time...you didn't have time to cover this...you didn't have time to really...focus on that...you just focused on this so it's kind of study limitations. Okay? Difficulties. Okay? Are important for the progress report, the interim report. Okay because it's part of your progress. It's part of your ongoing work and how you're solving problems. You might find some difficulties you encountered significant enough to mention in the final report because it might lead to something new or some opportunity to fix something or future research. Alright? Limitations. Ummm...Maybe you're not aware of the study's limitations in terms of the scope just yet...cos it's still only October...uhh...but if you do you can...you can include it if you know in the progress report...or uhh...interim report...uhhh...okay but in the final report you'll probably be covering uhh...a significant amount of limitations...yeah study limitations...things you weren't able to cover becos of the scope...bcos of the budget...things like that...okay? Ummm...so here's what I'd like you to do...o..kay? So again turn to the team...that you were just kind of working with...okay? Share...okay...articulate...describe...some difficulties you've encountered...it's gotta be something...okay...are you aware of any limitations? Like project limitations? That you know you're not gonna be able to really target in this FYP...but...you know...maybe it could lead to a future project. Yeah...any limitations you're aware of...try to share both of these...if not, maybe just difficulties. Okay? So go ahead I'll give you...
St Y [1:14:58] Of…the current project
T [1:14:59] Hmmm?
St Y [1:14:59] Of the current project
T [1:15:00] Yeah, for the current project. Yeah, so for your current project, difficulties...what difficulties have you encountered?
STS DISCUSSING VARIOUS CHALLENGES [1:15:03 -]
T talks to a group that has started getting distracted [1:16:42 - 1:16:47] What 'bout you guys? Any particular difficulty you're working on at the moment? Ta...try to solve?
St T [1:16:48-1:17:00] Difficulty of our OWN project, right? (T: ummhmmm) Yeah...if I already mention all of my difficulty in my project plan...do I need to uhh...re...re-mention it in the uhh...progress report or…
T [1:17:00- 1:17:34] Uhh...yes...two reasons. One, becos...ummm...bcos I don't have your project plan so I don't know...yeah...so it's good to put it in writing for the progress report...and two...bcos uhhh...your department will expect you to kind of...repeat this kind of information for the interim report...yeah...uhhh...now, maybe you'll solve the problem...before...before uhh...you submit the uhh...interim report. Right? Your interim report is due in Janurary? For your supervisor? You might have solved this problem. But by then, you'll probably be encountering new problems or difficulties…
St T [1:17:34 - 1:17:39] So...like uhh...update of the difficulties…
T [1:17:39 - 1:19:07] Update yeah...good word there...update...hehehe...any any anything in particular now? That you...kind of try to solve? (St shakes head) No? Yeah...well I

guess that's good...so far so good then...right? (St T: yeah) Umm...but definitely if...if you've written about difficulty already in the project plan...you can include it again in the...in our progress report...maybe you can even show some steps you've taken since then...to try to mitigate...the fault (St T: okay and then murmurs to others in Cantonese he thinks the project is really simple and another responds and says the professor he's been emailing but he hasn't replied to him. Another says he has met the prof 2 or 3 times. Discussion goes on about how he's gonna do his work without consulting professor. The student says he'll just work on his own but says the prof has met him once and then says he'll fucking get it done nonetheless. Another student chuckles...he then adds he's never checked his emails so often but he hasn't really replied)

T turns to another group [1:19:11]: How 'bout you guys? Any particular difficulties you're working on?

St O [1:19:14 -] Maybe the architectural...the game…

T [1:19:16 -] Architecture of the game?

St O [1:19:17 -] ...the data exchange will be maybe...we use the…[inaudible programme]

T: [1:19:29 - 1:19:44] hmmmhmmm…so you're working already to set up...set up the architecture...kind of...set up this kind of system for…? Yeah...is that what you're working on now? To...to try and figure out? Yeah? Okay...How 'bout yours, Sam?

St S [1:19:44] Maybe the coding measure? (T: Coding measure)...uhh...I…[inaudible]

T [1:19:59] Which...uhh language are you focusing on?

St S [1:20:00] C sharp

T [1:20:05] C sharp? Okay...uhhmmm...so there should be a lot of free kind of...libraries out there right? So you're just kind of trying to figure out the best one...any...any particular...any particular difficulty now? Other than just...like...have you tried any of the libraries already or…? (St: no) Not yet, so you're still kind of have to figure out...do you foresee any limitations? Do you know of any limitations...now? Like study limitations...like...you know, it won't include this or that...if it did it wouldn't have been a bigger project, it would have been...but know...maybe...you'd have the limitations of time...because of budget…

St [1:20:50 -] I guess the...because we need to do some kind of validation...and they need to…(T: is that validation on the XX part?) Yeah yeah yeah...and we need a security...which is not within my project scope…(T: hmm...okay) we use some existing digital ones to

T [1:21:22 - 1:22:25] Okay a way...a way...that's kind of a way you're gonna solve that. Solve that problem yeah...good…thanks!

T [1:21:45 - 1:27:49] So...thank you for that...talking about your difficulties...so as I mentioned before...uhhh...one of my previous students he came and asked me he...said uhh..teacher should I include difficulties encountered for my CAES class? Should I include it for my supervisor? I told I told them...yeah becos it shows your supervisor you're able to analyse...you're able to understand...the problem you encounter...and you're able to offer some possible ways to solve these problems. Sounds pretty good right? It sounds like you can impress your supervisor...with that...and you know what he went and did? He came back two days later or three days later...oh teacher, I didn't include the difficulties encountered for my supervisor in my progress report. I said why not? You al...you already had it finished...oh ummm...I have some quotes remember my supervisor quotes here...from mechanical engineering right? Okay I have some quotes related to the results and discussion and some of them apply to the articulating the difficulties encountered...okay? Uhh...let's see..okay...let's find a better one here…"lack of detail when describing features"...okay so here's the quote… "supervisor attacks the student...ummm...what about backwards movement? Have you actually tried that? Okay?

So...a rescue robot...a rescue robot...in emergency situation a rescue robot goes in and finds survivors...the supervisor asks "can it move backwards? Have you tried it?" He did not present it...I'm sure they've tried it but they didn't include it in the presentation...so that's what I mean...when I say play around...play around with...this and that...alright? Becos one day, your supervisor's gonna come and he's gonna say "hey did you try that? Hey did you try to do the reverse procedure?" Any...anything like that...right? "How to accommodate a situation whereby the patient is moving?" Can [] analysis of joint...how many joints? That's for a surgery robot...what about when the patient is moving not when the patient is still?" Okay...so...features during different situations. Okay… "Lack of product performance information" This one is a good one. "How to evaluate the efficiency of the walking performance?" Okay so they made a robot that walks and it can walk around obstacles. "How do you evaluate the efficiency of its walk? Is it walking slowly or is it walking fast enough? Does it trip on itself?" The walking robot… okay? So evaluation of your own products. Umm… "How do you evaluate the performance of your results?" Very general comment from the supervisor there...okay...so keep that in mind...Okay? Evaluate step three. Okay? "Vague description of progress - work remaining or future work" Okay? "After the project, what will you get? Is it a prototype? Is it a finished product? What is your progress so far? Okay… "lack of limitations and difficulties encountered" This is our topic right now. Okay. Here was the comment. Very straightforward and he pointed two he said "not traditional design. What are the challenges?" And the student went "uhhh…." Okay? Focus more on the major technical challenges. Why did you give up on the previous design for the new design? Okay? Explain why. Supervisors want these details. Okay focus more on the technical challenges. Any other good ones? "What probably will be the expected result? Any reference or standards test? Why did you select these parameters? Okay? So these all kind of relate in some way...to the result and discussion chapter. I wish I could share them with you but I don't have permission to share with you guys. Only to read them out. Okay? So supervisors. Okay. This was during...so mechanical engineering they do their pre...their final presentations during reading week of the second semester. So hopefully they took all their supervisors' comments seriously and fixed up their final reports in April...after the...after the reading week. Yeah...I hope they did. Ummm...okay? So definitely include your difficulties encountered. Your study limitations. This shows your problem solving...and your process...okay? How do you articulate difficulties? Okay? Ummm...how to follow these four steps. Okay? (T reading ppt slides: Can the readers understand the difficulty? Can they visualise it? Can they assess the impact and significance of the difficulty?...(adding own comment: is it a significant difficulty or is it kind of like ehhh...it's not really a difficulty...you can fix it up in a few hours?) To what extent can the difficulties be overcome? How? Any justification offered if the difficulties are not to be solved? (Okay so offer some potential solution or mitigation to solve this difficulty. Okay?) Do these (difficulties) lead to future work or future research opportunities?" Alright, maybe not for this project. Maybe for a future project. Right? Give back to the community. Right. You found these limitations, you found these difficulties...you can offer some new ideas to research into further for your readers. For the computer science community. Alright?) Okay? Can...can they visualise it? Maybe a visual can help...can help us understand...difficulty. Screen cap. Or something like that? That's very helpful. Okay? Umm...must take a look at two examples here. Okay? You can follow along on page 105. So...we're skipping through a bit...or, you can read it on here (pointing to the screen). Cos it's just these two short texts. So I've just put them up here you can take a look.

SILENT READING TIME [-1:28:40]

T [1:28:39 - 1:28:49] Okay...I'll try and cover the lecture...ummm...so what do you think? Do you think this is a good discussion? What's your opinion? Is it a good discussion of the difficulties they've encountered?

SILENCE [1:28:49 - 1:28:56]

T [1:28:56 - 1:28:59] What are your thoughts on this one? Mick?

St M [1:29:07 - 1:29:12] Think...I think it's actually pretty good

T [1:29:12 - 1:29:15] Yeah? Pretty good? Yeah Okay? Alright.

St M [1:29:16 - 1:29:19] It describe like...describe all the...scenario...yeah…

T [1:29:22 - 1:29:22] Okay so describing the scenario...you think they're able to visualise it? Understand it?

St M [1:29:24 - 1:29:35] Yeah I know there are two problem there they're encountering. One very...straightforward uhh..type like that the headline like...yeah…

T [1:29:35 - 1:29:55] Fair point. Yeah...ummm...okay how 'bout this...uhhh...if you were the supervisor, what would your...what would your comment be to these or...either one of those...you can choose whichever one...yeah...if you were a supervisor...for this student in particular...think like a supervisor now...with that cap on…

St D [1:29:55 - 1:30:05] They didn't explain...why they chose firefox and chrome and the R that resolution for their project at THAT time

T [1:30:05 - 1:30:38] At THAT time. Yeah? Okay...at this term the website views in the best by using the Mozilla Firefox...don't need the...by using Mozilla Firefox and Google Chrome. Okay...but ummm...what about internet explorer? Well, I mean that's...a VERY popularly used one…(sts chuckle signalling the fact that they get the joke)...I don't know why...anyone's using it...but what about internet explorer? How long does it take to open...open the website in...in another browser…?

St T [1:30:38 - 1:30:40] You can use just to download Google Chrome. (St Laughter)

T [1:30:41 - 1:30:55] To download Google Chrome? (Chuckles) That's what everyone uses it for right? (St: yeah) Ummm...John, any...anything to add to that?

St J [1:30:55 - 1:31:05] Yeah...I think the last "therefore" is not uhh...is not explain why...why is that use Mozilla…

T [1:31:06- 1:31:35] Ahhh good...good point here... so this therefore "therefore, at the term, the website views in the best by using Mozilla Firefox and Google Chrome" Okay...it doesn't really...so this therefore doesn't really match what came before…(St J: yeah)...cos they haven't really talked about umm...Firefox...or Chrome...specifically...until...now...that's what they're using...okay so a bit of a vague...kind of description there...ummm...Franklin?

St F [1:31:35] hehe…SILENCE

T [1:31:41 - 1:32:24] Anything to add to that? (St shakes head) No? Okay...ummm...okay so the student has provided some difficulties encountered or some limitations. Mick, you mentioned that pretty good (chuckles)...you like it? Okay...ummm...here's my questions...so...regarding the first point...yeah...is it...is it actually that...time consuming? To...open up different browsers? And test the website on different browsers? Yeah, at least the three popular ones...Firefox, Chrome and Internet Explorer. They're usually installed on all of the Chi Wah computers. Anyways...yeah...so is it really like a big problem encountered or…?

St D [1:32:24 - 1:32:31] I...I think he means not only test (St X: yeah) but also to fix the bugs...configure…(T: umm hmmm) to make it compatible across all the process…

T [1:32:31 - 1:33:38] (Interrupts St D) I definitely agree with you. I'm glad you brought that up. BUT, when I looked at his writing, I don't know specifically what bugs...yeah...I get the sense that...he's...he or she was too lazy to write about it...cos it was 3 am and they had to submit it...yeah...ummm...but...I completely agree...yeah maybe they ARE bugs...that

they would have to solve in...in...ehhh...some of...you know there's some specific browsers...but, we don't know...hasn't been written...it hasn't been tested...yeah...okay...ummm...the second one...second one seems like a bit more of a substantial difficulty I think...yeah, getting websites to run...you know...desktop level...different screen sizes and mobile versions...yeah, requires a bit more work...I think...some website managers...like content managers...wordpress or wix...they kind of...they try to have like a….automatic...mobile version...Right? Yeah they adapt. Any other comments?

St H [1:33:40 - 1:34:00] Umm I guess there's a limitation about umm...like...inherent difficult challenge...that can't...cannot be easily overcome or resolved for these two umm...well apparently they're getting solutions to these challenges so I was wondering there're more difficulties rather than…

St H [1:34:01 - 1:37:05] Good point...yeah...if you...if you look at the...if you look at the booklet on page 105...okay? Uhhh...maybe I can bring that up right now? Look at the booklet on page 105. The text here is accompanied by their headings...6.1 limitation...yeah...umm...is this really a limitation? Or is it just...a kind of...difficulty encountered that they...can't solve...or have solved? Yeah...is it a limitation that leads to future research? Alright? So...good point there. Yeah I think limitation is a bit...is a little bit bigger...yeah...limitation can lead to...maybe...if the limitation is big enough it can lead to...a...a future project...to...to target that specific limitation. Yeah...whereas I would see this more as a difficulty...right? And...I would call the student a little bit lazy...ummm...on this time consuming thing with the browsers...at least...at least open it...and tell us what bugs you encounter...yeah...maybe fixing the bugs...maybe...that's outside the scope but at least let's see...let's see what bugs they are first...alright? Ummm...yeah good point...yeah limitations...is a little bit bigger...isn't it? Yeah...study limitations in a way...okay so...in general...yeah that would be my comment for this student….umm...at least they've included...they've included this section...you can see how they they can improve it...okay? So they are legu...legitimate issues…(T reads from slide "the scope is limited") and here's what I would ask the student if I was one to one with the student I would ask him there must be a bit more…"Slide text: there must be a bit more critical functionality challenges experienced"...for example, okay...functional...functionality challenges...how 'bout the bugs...right...the bugs...in each browser...what are they...did you take a look at them? Alright? That's a...more quality discussion than...yeah...:"Slide text: these can be accompanied by visuals such as a screen capture" to show the...you know to show the resolution issues...alright? Uhhh "slide text: time-consuming job here is vague. Can we have more precise figures?" Yeah...Hours...to days...to weeks? Right? Are there really that many differences between the browsers...well...the student hasn't told us...uhh…"slide text - no recommendation on addressing these in the future"...yeah...what...what's their plan in the future? Basically they're saying for now, we're gonna stick to this...but this is just an interim report...first semester...October...what about...what about in a few months' time...what about in uhh...second semester...what's the plan then? Okay? Any questions about the difficulties? Limitations? Okay? So another section to include in your results and discussion chapter here...okay? Ummm...good…[assignment instructions]

Around 1:40:00 a question asking if sts (named two of them) have results but didn't push

T [1:40:52 - 1:41:00] Any early testing or playing around? Franklin you've tried to do something with the super resolution thing right…(St F: I did)...Can you...can you explain to the class what you did?

St F [1:41:00 - 1:41:54] What I did is...I just went to the github repository and try their models there (T: whose models?) Uhh...the researchers'...

T [1:41:11 - 1:42:00] Okay...so other researchers' models...so you took their model. You played around with it? Have you tried it? You encountered some problems? Here and there? Yeah? Okay? So play with...play with some things...test something...early...just early stage stuff...but it's something...that you can include...in the progress report. Okay? So don't feel stressed out when I say results, give me some results. I'm not trying to push you for results. I'm just asking for...for some of your progress...your work done so far...do you think that's a little more...a little more..ummm...clear? Yeah? Okay...so if you want you can snap a picture of this. For your reference...or write it down…[Q&A session continues…followed by suggested prep task for next session]