THE USE OF LANGUAGE TO ENHANCE THINKING IN PROBLEM-BASED LEARNING TUTORIAL GROUPS

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Tutor facilitation and group functioning in Problem-based Learning (PBL) are two of the critical success factors in any PBL implementation. There has been much evidence to support the proposition that PBL facilitates better reasoning and thinking in PBL students. Vygotsky's (1978) work on language and thought suggests an inextricable link and inter-dependence between the two. The use of language is critical to the development of thinking. This paper analyses one transcript of a PBL tutorial group discussion. It seeks to affirm the use of language to influence and shape the cognitive level of facilitation and group discussion, and to understand the nature, potential and limitations of the use of language to enhance thinking in a PBL context. The paper concludes with a discussion on some of the issues in the use of language in tutor facilitation and group functioning, in Problem-based Learning.

INTRODUCTION

Problem-based Learning proponents claim that students engage in more thinking; that is to say, more causal reasoning and higher order thinking (Vernon and Blake, 1993). Vygotsky (1978) showed that language and thinking are inextricably linked and dependent on each other. How do we use language to create thoughtful learners in our classes? How does the use of language enable students to think? What are the other linguistic structures or forms that support the nurturing of a thinking environment among the students in a PBL tutorial? These questions are the focus of this paper.

While Costa and Lowery (1989) have strongly suggested specific language approaches to ensure thoughtful classrooms, this paper will investigate whether these really happen (and how they happen) in a PBL context. The focus is on the use of language by both the tutor and the students to promote thinking in a PBL tutorial discussion group. Four areas of language use will be considered: questions, thinking words, linguistic structures, and non-verbal linguistic tools.

LANGUAGE AND THINKING

Psychologists have noted the importance of language in the development of intelligence. However, it was Vygotsky (1978) who proposed the link between language and thought. According to him, the development of both thinking and speech depends on the changing relationships between these two functions. Piaget (1970) also connects thought with language, with an emphasis on the child learning (via internalising with language) to organise the outside world and integrate it with the concept of self. To Piaget, the action occurs first, followed by the child interpreting the meaning of the action using his own language internally to form cognitive operations.

Thinking can be said to depend on how language is used to facilitate it. This is especially so in the context of group discussion, where language is used to think together as a group and collectively make sense of experience in solving a problem (Mercer, 2000). Mercer believes in using language to "think together for making sense of experience and solving problems." (p. 1) Vygotsky (1978) argued that thought development is determined by language, i.e., by the linguistic tools of thought and by the socio-cultural experience of the child. Costa and Garmston (1994) consider the use of language to be central to cognitive development. They believe in developing a language of cognition.

Costa and Garmston (1994), Moffett (1968), and Marzano (1988) all deal with the teaching of thinking and the language of thinking. Others like Hyman (1979) and Strong *et al.,* (1980) focus on the use of questioning techniques in a classroom setting to promote thinking. The closest attention to the use of language for thinking was paid by Costa and Lowery (1989), who advocate thoughtful classrooms fostered by using specific language functions. Cazden (1988) and Lemke (1989) also looked at the metacognitive activity in the discourse of students, and studied the pedagogical patterns of teacher talk in relation to surface learning, but did not touch on the strategic use of language for thinking. Mercer (2000) observed that this is one area that has not been given as much attention as it deserves.

Eco (in Marzano, 1988, p. 61) pointed out that language is the most powerful "semiotic device" that man has invented. Piaget (1970) sees language as one of the many semiotic functions, but in most instances the most important one. Oral discourse, the use of language in a discussion or conversation, expresses the thought and intent of the speaker. As a result, oral discourse "leads to acquisition of knowledge as well as the application or production of knowledge" (Marzano, 1988, p. 62). Van Dijk (in Marzano, 1988, p. 62), stated that all discourse comes from specific intentions. Halliday and Hasan (1976) proposed that basic intentions are inherent in oral discourses: to inform, persuade, generate, express emotions, ask for information, etc.

When students think about their thinking, they are engaging in metacognition. Students can do this either silently, engaging in self–reflection, or demonstratively (i.e. verbalising, writing or drawing their mental processes). Metacognition is an important aspect of realising or surfacing thinking. It allows students to realise what, and how, they think. It also allows us to "see" thinking, its processes and patterns; and because we can "see" it, we can develop or assist in the thinking activity of the students. While inner language is found to begin in most children around

the age of five, metacognition blossoms at about the age of eleven, according to Costa (1991). However, Luria, a Russian psychologist, discovered that not all adults metacogitate (Whimbey and Whimbey, in Costa and Lowery, 1989, p. 64). If students do not reflect on their own thinking, it is tantamount to having students doing things or following instructions without understanding why they are doing what they are doing. This will lead to poor thinking skills, or at worst, people who do not know how to think for themselves at all. Whimbey (1980) believes in having students think aloud while they solve problems. The awareness of one's mental process leads to more efficient problem solving and reading. Similarly, the more we talk and think about our thinking, the better our thinking becomes (Costa, 1991).

Linguistic tools

The importance of using questions to promote learning and thinking is well established and documented. It is cited as having a crucial "role in the process of learning and modifying mental modes" (Bain, 2004, p. 31). Cunningham and Luk (1985) call for the use of different types of questions to promote learning, and therefore thinking. Hyman (1979) looks at the different phases of a discussion and the strategic use of language. Dantanio (1990), who reviewed the ranges of questioning techniques, also believed in their use to enhance thinking. Questioning is fundamental to the stimulation of thinking, and it is regarded as a crucial method of teaching. The ability to question and question again is essential to encourage thinking. More importantly, Gall (1970) regards questioning as one of the basic ways in which the teacher stimulates student thinking and learning. The technique of questioning, in relation to student achievement, has been extensively researched (Redfield and Rousseau, 1981).

In the use of language, we cannot ignore linguistic syntax and structure. Various linguistic structures express thought processes. Halliday and Hasan (1976) outlined several cohesive elements and semantic relationships between sentences that communicate certain cognitive structures. If there are cohesive devices that one can draw on to aid in one's communication and the use of the language, it will greatly facilitate and expedite thinking in a discussion. Dillon (1988) also suggests the teacher should use a range of non-questioning alternatives: various kinds of statements, student questions, giving of attentive signals, and maintaining deliberate silences.

This is very much what Costa and Lowery (1989) were talking about in their "thoughtful classrooms" – the use of thoughtful words to encourage thinking in the groups. Nagy and Scott (2000) asserted that knowing a word means being able to do things with it, and is almost like being able to use it as a tool. Thinking words are words that are used to suggest or indicate thinking activities for the group discussion.

Discussion group environments should be designed to support intellectual risk-taking, so that students will be creative and self-directing in their thinking. Creating and managing such environments is central to the work of tutors. It is the role of the facilitator to play the enabling agent – establishing the conditions, and interacting with students in ways that enhance their learning (Froyen, 1993). The interaction in the discussion involves responses and reaction to the input from other students. Hence, the critical use of language to convey nuances, ideas and feelings has the ability to shape the environment of learning. Clark's (1996) understanding of the

word "language" includes non-linguistic cues and action. These are the pauses, laughter, and environmental settings. Rowe (1987) suggests the importance of wait time to stimulate inquiry. Tutors and students both have key roles in establishing a positive and conducive environment for discussion groups. The non-verbal linguistic tools are the devices that tutors employ to bring about that kind of encouraging environment, to enable the students to engage in their thinking activity.

RESEARCH METHODOLOGY

The research context comprised four PBL tutorial groups undergoing a course at Temasek Polytechnic in Singapore. Each group had five or six students. Audio recordings of the tutorial groups' proceedings were collected for analysis. The analysis involved the examination of word or phrasal use in the discussion. This was to analyse the effect on the thinking level of the group: how language use affected the connection of ideas in the thinking processes of the discussion. For purposes of this paper, one transcript analysis of a tutorial group is examined (see Appendix for the transcript).

DISCUSSION

The transcript analysis demonstrated evidence of the critical use of language in the processing, enhancing and progressing of thinking. Both tutor and students employed various linguistic devices to enhance thinking. In this discussion, four dimensions are explored, namely, questions, thinking words, linguistic structures and non-verbal linguistic tools.

Questions

The use of questions was seen to play a major part in directing the thinking processes of the members. Every question generated thinking about the answers or on the issue. There was a good use of open and closed questions. Both types of questions were used for strategic purposes – open questions to generate ideas: "What do you think makes the script good?" (L1) and "What makes the script clear?" (L14); and closed questions to confirm or clarify a response: "Not so much?" (L103) and "Remember our last project?" (L127).

The questions, "What do you think makes the script good?" (L1) and "What makes the script clear?" (L14) were general in nature because the responses were unpredictable. Such general open questions were useful to set the tone of the thinking: it allowed for a freedom of responses to the question. However, this also presented a problem for the group. They tended to have difficulty in responding. In the case of the open question, "What do you think makes the script good?" (L1), the ideas appeared to be somewhat exhausted by the second response, as indicated by the long pause of six seconds. A modified open question was then used: a question that had a specific thinking word. "What makes the script clear?" (L14) and "What is the length of the sentences?" (L42) were open questions that were accompanied by a word or phrase critical for directing the thinking of the listeners. These words were "clear" (L14) and "length" (L42). The

questions were open in nature, but were referenced to the specific words. The more specific an open question was, the more responses it was likely to get. In this transcript, the modified open question, "What makes the script clear?" (L14) had four responses, and "What is the length of the sentences?" (L42) had eight; in contrast, the general open questions "What do you think makes the script good?" (L1) and "What's the idea of pauses?" (L113) each resulted in only two responses.

Within the types of open, closed and modified open questions, the function of these questions differed. "What makes the script clear?" (L14) and "What is the length of the sentences?" (L42) were examples of questions that aimed at producing metacognitive activity. These questions confronted the student with a need to verbalise what he was thinking about when he mentioned "Clear too…" (L9). Metacogitive questions allowed students to verbalise their thinking aloud. This in turn allowed the tutor to observe more clearly the thinking of the student, and assisted the student in any way the tutor saw fit. In this case, it was the tutor who wanted the student to express the thoughts that were in his mind. In other cases, it was the students who asked metacognitive questions such as, "Not so much?" (L103). S2 had to explain what he meant by "not so much" (L100). This self-analysing question was asked by the student even though he probably knew the answer. He was merely expressing thoughts by way of a question to prompt interest and thinking on the matter. However, it revealed his metacognition at that point. Here, surely, was an example of what Costa (1991) and Whimbey (1980) were referring to when they talked of students "talking aloud" about their thinking.

Closed questions were used to confirm a thought or clarify what was said earlier. The question, "Not so much?" (L103) sought to clarify a comment made. It encouraged the listener to review his thoughts in order to see the relevance of this comment to the discussion. Students checking each other's thinking on the subject often used closed questions. Closed questions have a specific thinking word in them. "Remember our last project?" (L127) is a recall type of question using the word "remember". Students used questions to draw attention to past events. The question "Remember our last project?" (L127) was posed, but the student did not wait for an answer, as it was a device to connect the thought to a previous event. The question served as a connective tool in the process of thinking.

There was a movement or pattern in the use of thinking words from creative to critical, and subsequently to application questions. Questions such as "What do you think makes the script good?" (L1) and "What makes the script clear?" (L14) were creative and open questions, "Not so much?" (L103) was a critical and closed question, and "Remember our last project?" (L127) was an analytical question. This movement suggested an unconscious strategy or pattern of questioning by students, or a deliberate strategy by the tutor.

Questions were employed as a key linguistic tool to trigger, sustain and direct thinking. Different types of questions were used. They were critical in promoting and enhancing the thinking processes of the students, whether they were used by the students themselves or more strategically by the tutor.

Thinking words

Thinking words that were general in nature could affect the thinking climate of the discussion: for example, "think" (L2) in the general open question set the tone of the group. There was no specific thinking activity to engage in for the question, but just a request to "think" on the given topic: "script". General thinking words set the stage for subsequent responses to occur, rather than directing the group's thinking into something more productive. General thinking words garnered an average of one to two responses.

The phrase "what makes" (L14) provided a focused thinking action. It prompted the group to think along the lines of "What is the connection between the qualities and a good script?" The specific thinking word elicited more responses than those in open questions. Specific thinking words suggested a definite type of thinking instruction for the listeners to act on. Another example was L127's "Remember…?", specifically asking the listeners to recall something.

Specific thinking words were effective in directing and producing a thinking effect. Such words cultivated and nurtured a thinking environment, encouraging groups to think more.

Linguistic structures

These linguistic structures represent syntax that students use to express their thinking. Group members facilitated the thinking process of the discussion by using words and phrases that served as focal thinking points. Careful crafting of the words was important, as seen in the follow up questions "What is the length…?" (L42) and "How do we see that in the text…?" (L137). When "How much is too much?" (L41) was deemed inadequate to generate sufficient thinking, the tutor immediately suggested "length of the sentence" (L42) in order to define the scope of the thinking. This specific choice of words to direct the thinking from "How much is too much?" to a narrower and more specific "length of the sentence" was a deliberate shift in the focus of the thinking activity. This shift could be seen as a lateral form or a converging form. In the lateral form the thinking words are connected by a common root or similar words, while a converging form implies that the thinking becomes more focused. These follow-up questions were examples of a converging form.

The lateral form generally has four different types: synonyms, antonyms, repetitions and paraphrases. The synonym type could be seen in "straight" (L22), "short" (L25) and "not too much writing" (L39). These words were similar in meaning and were used to connect or continue the thinking process. An example of an antonym was the word, "bombastic" (L89). It generated subsequent responses: "audience will understand…audience will know...." (L92)

These lateral forms maintained the connectivity of the thinking process. Repetitions of the same word or phrase were found throughout the transcript, as students used them to remain relevant and connected to the discussion. The word "clear" occurred as an idea (L9), as a question (L14) and as a concluding statement (L86). In between these occurrences, paraphrases of "clear" appeared as "straight to the point" (L22), "short and sweet" (L26), "for someone to quickly understand" (L53) and "not longwinded" (L80). There were other examples of paraphrasing too.

"Not too much writing" (L39) was a paraphrase of "short" (L32), and "Not bombastic" (L89) was a paraphrase for "words that audience must understand" (L91).

Words that quantify developed the thinking towards "latching on" to a visual image. The word "straight" (L22) in "straight to the point" guided the thinking to a visual reference. The word "length" (L22) in "length of the sentence" was another example of guiding the thinking in terms of number of words. The phrase "How do we see that in the text…" (L139) orientated the students to think more concretely.

The use of reference or comparison was common among students. Phrases such as "like maybe five…" (L57) and "Remember our last project?" (L127) were examples of students using comparisons to connect to previous thoughts.

Qualifiers were used to frame and limit the scope and breadth of thinking – to hedge the assertions and statements made. "Maybe" (L100) was an example of a qualifier, but they were generally selections from a set of auxiliary or helping verbs. One type of qualifier is known as "throat-clearing." It signals discomfort with an assertion, and it was used when the students did not want to be straightforward in making their point. An example of a "throat-clearing" preface can be seen in "I think…" (L6). Others included "maybe" (L58), and "can" (L70). These "throat-clearing" devices served to cast doubt or lighten the assertions made, and signalled reservations in the position held by the speaker.

There were several words or phrases that were used to create or maintain the mood for discussion. These are known as discourse markers. "OK guys…" (L1), "like my boss" (L66), and "Yeah, you know…" (L69) were examples where these words supported the mood of free and easy thinking. Non-verbal laughter followed the discussion. Such markers signalled relationships between the students' contributions and the discussion as a whole. They performed a relational function in the thinking about the issue. For example, "you know" (L69) prefaced new information to signal that it was being given in a friendly and conducive environment.

Use of emotional or loaded words was a powerful means of evoking thinking on a matter. The references to the "boss" (L67) and to "lawyers" (L70) were powerful images that were recalled to support their thinking on "grammar" and "what makes a good script?" These could have been difficult or unhappy experiences that brought home the lesson on grammar. At the same time, the references to the work place were effective triggers for discussion of, and thinking on, the subject.

The use of stresses was frequent, providing emphasis on the word or issues that the student or tutor wanted to put forward. This is known as intonation in oral discourse. The stresses on "straight" (L22), "short" (L25) and "grammar" (L63) were examples of the intention of the speaker to put emphasis on the points made. Students picked up the stresses and continued the discussion thread on the topic they brought up. "…straight" (L22) leading to "straight" (L26) and "grammar" (L63) leading to "grammar" (L72) were examples.

Interruptions were an interesting way to indicate the enthusiasm or assertiveness of one's ideas. Interruptions suggested a need to contribute quickly and the immediacy of the ideas introduced. "Clear too" (L9) was a highly engaged interruption to the question of what makes a good script in L2. "And…" (L24) as a response to "point" (L22) was another example.

Summarising was a technique used to establish common understanding among the team members throughout the process of discussion. The transitional word, "so" (L31 and L86), saw students attempting to summarise. These sentences served as a re-organising contribution to the discussion and "settled" the thinking of the group with a conclusion. This was particularly important for collaborative learning, because summarisations act as closures to several loops of thinking. Without closure, students would be wondering when they should move on to the next level or a different area of thinking.

The evidence of several cohesive ties and a range of non-questioning techniques in the discussion suggested that students and even the tutor engaged in these freely to direct and manage their thinking. A clearer and broader awareness of such cohesive ties and their impact on discussions such as these will aid the students and tutors in facilitating their thinking.

Non-verbal linguistic tools

Pauses came in several forms: short pauses of about three seconds, slightly longer pauses of about five seconds, and long pauses of about seven seconds. Short pauses allowed students to connect with each other's comments and ideas with some individual silent thinking. Short pauses in "short and sweet…" (L33) and "sentences…" (L45) were two examples.

Slightly longer pauses and long pauses indicated prolonged thinking without a ready answer or response. Such a pause may suggest hesitation or uncertainty of the respondent about whether his response would be relevant or logical. Sometimes, the pause was deliberately allowed to linger to wait for someone to break the silence. There was a case of about five seconds (L3) after which a student suggested a response to the question. This was not the case when there was a long pause of six seconds (L9). The students had no response and the tutor decided to come in with a more focused question. The pause in L141 lasted a good seven seconds before someone came up with a response. This was deliberate on the tutor's part, as he wanted to sustain the thinking and more importantly, to transfer the ownership of discussion of the topic to the students rather than "rescuing" the discussion himself every time there was a long pause (Mok, 2003).

In a pausing situation, whoever spoke first owned the "air time". Others could have been thinking but the nature of discussion in a group was that the one who owned the "air time" tended to dictate the thinking. Because of this, sometimes a speaker may introduce a point with no regard to what the previous contributor might have said. The response "must have pauses" (L96) had nothing to do with what was said immediately before, but was in fact a delayed response to "What makes a script clear?" (L14). This was interesting, as the student was involved in the previous discussion but felt it was time for him to introduce his point at a later stage. The ability to hold on to an idea for a good four minutes demonstrated his or her attention and participation

in the discussion. Nevertheless, the notion of "air time" must be borne in mind by the tutor, who needs to exercise his facilitating prowess to ensure that the verbal exchanges lead to the construction of a meaningful discussion.

The environment of the discussion was made friendlier and more encouraging by the non-verbal behaviour of the participants. The smiling facial gestures of the tutor (L15) and laughter of the students (L61) suggested a "thinking-friendly" environment was present and was also conducive to more thinking and more responses (less long pauses). The absence of pauses in the eight responses (L52 to L100) suggests a good environment of uninterrupted flow of thinking and discussion.

A friendly setting and environment generates more responses in group discussions. Laughter seems to garner more responses than smiles. It appears that the friendlier the environment, the more thinking results.

CONCLUSION

The research has shown that language use is a prime tool for thinking and learning. From Piaget's learning via language and Vygotsky's "thought and language", to Marzano's thinking words and Costa's thinking classrooms, and to Mercer's learning and thinking together in a group, we have seen how the use of language is linked to the development and generation of thought processes. The learning and thinking of the individual is dependent on the social interaction with another individual in a shared context (Vygotsky, 1978; Johnson and Johnson, 1992; Mercer, 2000) – in this case a PBL tutorial. At the same time, the individual also relies on the social exchange with one or more competent persons with the necessary knowledge and expertise – in this case, the tutor (Rogoff, 1990; Froyen, 1993).

Connecting and making sense of the discussion were the thinking processes that students engaged in, in order to fulfil their goals in problem-solving, decision-making, comprehension, research, and oral discourse. So, in one sense, the understanding and thinking activity depended on the quantity and quality of the connections in thinking made in a discussion. There are words and phrases that can be strategically used to trigger or direct these connections and bring out concepts necessary to achieve the goal of the mental activity. For example, carefully crafted words can be used to direct the focusing connective thinking of the discussion. And there are some words or phrases (Nagy and Scott, 2000; Costa and Lowery, 1989) which describe this thinking action of focusing that will help the student to sharpen or narrow the connections of the concepts to the intended path or goal. If words like "decide", "select", "choose", or "prioritize" are used, the student will be directed to concentrate on what is available rather than think of other options or ideas. The quality of the thinking is therefore influenced by the clever use of language to generate the desired thinking outcomes.

The PBL discussion groups are virtually thinking communities, where each group functions as a network to assist each other in the construction and development of both the individual's cognition and the collective thought. The co-operative learning, construction and negotiation of

meaning via social discourse are the highlights of the constructivist pedagogy of PBL (Johnson and Johnson, 1992; Jonassen, 1998).

The research has shown that there was an abundance of discussion and metacognition in this PBL group. And this was a result of students encountering a problem scenario together, with a collective aim of solving the problem. Students engaged in metacognition, and hopefully this would develop the thinking attitude and ability of these students in such a way that they can apply them during their work. Language is the medium of metacognition. When we "think to ourselves", we use language to form and express the thought or idea. We also use language to relate one thought to another. We question in our minds and we link thoughts using language. We express our thoughts and thinking processes in language. We use language to describe and express our thinking to another person. Language, and especially the use of language, is a tool that teachers can use to enhance cognitive development.

This research has indicated that in order for a tutor to be effective in using language to enhance students' thinking in a PBL setting, there was a need to be familiar with a good range of linguistic tools, such as the different types of questions, and a range of specific thinking words, linguistic structures and structures, both verbal and non-verbal forms. This will result in better communication and facilitation and therefore a higher level of thinking and cognitive development among the students.

Tutors should also be mindful of the strategy of patterning or scaffolding the students' thinking. The movement from creative to critical thinking, or from understanding to application and problem-solving, is a strategy a tutor can take to the discussion with the goal of engaging the students in a higher order thinking activity.

More research can be undertaken in this area of use of language to enhance thinking among students, not just in PBL groups but also in conventional instruction-based classes. Areas such as attitudes, dispositions, skills development, group dynamics, personality type and environments do have an influence on the climate and activity of the thinking amongst the students. What this study looked at was one dimension of the use of language, to determine how it affects thinking.

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Appendix

Transcript Analysis

Table 1 provides a sample transcript analysis (Transcript A1) chosen from the four transcripts analysed. The rest of the transcripts were not provided in this paper due to the limitation of space. The transcriptions are numbered line by line for easy reference. A set of transcription symbols is listed below:

1. The tutor or facilitator is known as T.
2. The students are indicated by S1, S2, S3, etc.
3. Pauses of about two to three seconds are indicated as "…"
4. Longer pauses are indicated with the number of seconds as "…(5 sec.)"
5. No response is indicated as "-"
6. Inaudible items are indicated by dots within parentheses: "(…)"
7. When someone continues after an interruption, this is reflected by:
   S1: Yeah, not those long type of sentences…
   S2: Yeah
   S3: ---they should be short and sweet…
8. Simultaneous speech is reflected as:
   S1: Like introduction, [body…
   S2: [body and conclusion.
9. Emphatic speech (intonation) is underlined as:
   S1: These are two different <u>styles</u>.
10. Words that are unclear or uncertain appear in parentheses:
    S1: Like the (introduction), you cannot have the body before it.
11. Words that are inadvertently left out in the discussion which do not interfere with the train of thought (ellipses) are reflected by words in italics in parentheses. These words are filled in by the author to aid intelligibility:
    S1: (*Introduction*) must be clear …
12. Non-verbal cues and gestures are explained in italics in parentheses:
    S1: Sort of…(*laughs*)
    S2: Like…(*long pause*)
13. Other symbols: Q: question used; T: Thinking word employed; S: Linguistic structure; NV: Non verbal gesture

Table 1 Transcript Analysis of Transcript A1

Line	Transcript A1	Identifying the use of language. Commentary in italics
1	S1: OK, guys, what do you think makes the script good? …. (5 sec.)	Q: Open question asking for ideas. *An information gathering skill question.* T: Use of "think" as the thinking word. S: "OK, guys…*" is friendly.* NV: Pause *for thinking.*
5	S2: I think it has to be short and [sweet.	S: modifying qualifier: "I think". *S2 and S3 answers are a result of their thinking on the question posed by S1.*
	S3: [Clear too…(6 sec)	*Interruption indicates immediate connection with the train of thought.*
10		*The long pause of 6 seconds prompts the tutor to come in with a question.*
	T1: So what makes a script clear? …(5 sec) (smiling)	Q: Open question with a focus on the word "clear". *A Generating Skill question.* T: The word "makes" *gives the trigger for further thinking.* S: Use of repeated word "script" *to continue the thoughts on the topic.* NV: smile *encourages discussion*. *Deliberate* pause for 5 seconds without interjecting *to allow thinking.*
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	S4: They (*scripts*) go straight to the [point.	*The stress on "straight" reflects the focus of his idea.*
	S2: [And the sentences are short and straight to the point.	*Use of "And…" connects with the previous utterance and continues the thinking.* S: Use of repeated "straight" *ensures continuity of thought. The stress on "short" together with the repeat of "straight" suggests the close connection between these two points. S2 is making a connection between "short" and "straight".*
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	S1: ---So the sentences are short and sweet…	*An attempt to summarise the short exchange.*
35	S4: The style of writing. The script must be short. There must not be too much of writing.	*S4 introduces "style" as an interpretation of the length of the script. S4 has the idea of style of writing and this has something to do with the length.* S: "not be too much words" connects with "short and sweet" *indicating S4 builds on S1's contribution. The word "short" possibly triggered off his understanding of style and the length of words.*
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	T1: How much is `too much'? What is the length of the	Q: Open question but focused. *Generating skill. The second question is closed, narrows the first question. The use of a second qualifying question directs the thinking of the first question to a narrower scope. "How much is too much?" can open up varied answers. "length of the sentences?" points the thinking of the students to ponder over the sentences specifically.*
45	sentences? … (looking at the rest)	
50		NV: The gesture of looking at others *suggests to others, besides the one who just contributed to the answer, a need to answer or have an equal responsibility to do so.*
	S2: Long enough for someone to quickly	*S2 responds to the question but uses the word "long" to continue her answer.*
55	understand what you are saying… Like may be five to ten words in one sentence.	S: Giving an example of "five to ten words" *illustrates the connection made from the point S2 is making to a picture of "five to ten words".* A converse explanation *is added to further explain what S2 means.*
60	Just not like those sentences that never end. (laughter)	NV: The *laughter shows that S2 enjoys the contribution together with the rest.*
		S: modifying verb: "maybe"
	S3: Grammar is important also. There	*The discussion on the script led S3 to remember her boss's concern for grammar. The connection with S3's working environment gave rise to an important point. (This reveals the possible thinking threads that tutors can use to facilitate thinking)*
65	are people who listen to grammar…like my boss	
70	S2: Yeah, you know lawyers; they can single you out on the wrong grammar you make. And just talk about the mistake all	*A previous negative experience with grammar is recalled, prompted by the reference of "boss" referring to work environment.*
		S: discourse marker "you know"
75	the time. (laughter)	
	S4: The sentences also must be written in	*The idea of "long sentences" has not left the thinking of the group as S4 continues to build on S2's contribution of "long". S4's use of "longwinded" and "dwell on it for too long" reflects the continuity of the different variations of the root word. S4 also uses paraphrasing to convey the same point in three forms.*
80	such a way that it is not so longwinded, not repeating all the same stuff, or dwell on it for too long …	
	unless it is important.	S: Use of words conveying necessity: "must be…"
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	S2: So that it will be clear...	T: the word, "clear" continues to be the focal thinking link. Summarising the discussion.
	S5: Not bombastic.	
90	Must use words that audience will understand. Like, use of slangs or words that the audience know…	*S5 brought in another quality. S5 elaborated on what "bombastic" meant.* S: Use of words conveying necessity: "must use…"
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	S3: The script must have pauses to help in understanding.	*S3 introduced another good characteristic of a script.* S: Use of words conveying necessity: "must have…"
100	S2: ---Maybe not so much.	S: modifying verb: "maybe"
	S3: Not so much?	*S3 did not quite understand why S2 made that comment and initiated a question.* Q: Closed question (Evaluating Skills) *focusing on confirming what S3 heard and at the same time inquiring as to why? There is semantics involved here in the closed question. It has two purposes: one is to confirm the answer but more importantly, it is to inquire into what are the reasons for the comment made by S2.*
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110	S2: Yeah. Less pauses. After all, what's the idea of pauses? (looking at S3)	T: Phrase "what's…" *triggers the thinking. The semantics are obviously picked up by S2 when the answer includes a response to explain the comment. S2 did it in an interesting way: via a question.* Q: Open question (Analysing Skill) *to direct the thinking towards the purpose of "pauses".* NV: the "looking at S3" *indicates the question is directed at S3 and an attempt to help S3 arrive at his own understanding of the reason rather than providing it.*
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	S3: …	NV: S3's lack of response *prompted S5 to join in.*
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	S5: It allows people to absorb first and allow them to think about what you have just said.	*Although the question is not directed at S5, S5 responded in a constructive effort to build the knowledge of what they are discussing. This is good evidence of joint action and joint responsibility to learn together, with members co-operating to contribute to each other's knowledge.*
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	S2: Remember our last (*written*) project? We didn't have	T: "Remember" is the thinking word. *Remembering Skills.* Q: Closed Question. *S2's response was not in reply to S5.*

130	pauses. It was too long winded and too many words…	*S2 had something in mind to say when S2 questioned S3. References are made to the previous project they did together.* S: The repeat and use of "longwinded" and "too many words" continue to connect with the previous thoughts. *The elaboration and repetition of words and phrases is providing the scaffolding for the group to build an understanding of the topic.*
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	T: But how to <u>show</u> pauses in a script… How do we <u>see</u> that in	Q: Open question with critical thinking involved: Evaluating Skill. *An application question asking for*
140	the text or script? … (looking around) (7 sec)	*practical examples of the use of "pauses".* Q: Open question but more focused. *The use of a second question narrows the first one making a more practical application. This follow-up second question without allowing for response to the first is to clarify and direct the thinking to a*
145		*specific area.* NV: The long pause *shows the shift of the discussion and students having to think about how to answer the question posed.*
	S3: Write the word "pause" inside the script…(2 sec)	*S3 gives a practical example.*
150		T: The word, "pause" *continues to be the focal thinking link.*
	S5: Leave a blank or write the letter "P" by the side… (5 sec)	NV: Long pause *indicates students have exhausted their answers.*
155	T: Okay, those are good suggestions. (smile)	S: A positive comment. *Tutor, satisfied with the examples given, gave a closure to the thinking with a positive comment.* NV: A smile *provides an approving closure and atmosphere for this stage of the discussion.*