

Generating questions for oral presentations by science students

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Abstract

This study considers the use and impact of questions in the preparation and delivery of oral presentations in ESL classes for Japanese students studying dentistry. An analysis of when questions were used, which question-types were commonly employed and the main problems that students encountered confirmed the need for a cognitive approach. The findings may be of use for developing approaches to oral presentations in university ESL classes where the focus is on meaningful independent student research and presentation of it.

Key words : oral presentation, question-types, student survey, task-based language teaching, thinking process

Introduction

One of the striking things about teaching in Japan is how university students actively seek out the chance to communicate in English in informal situations such as on the bus or over lunch, naturally generating many questions, sometimes using quite complex sentence structures. In the classroom situation the same students seem to find it much harder to raise questions, especially in larger groups of their peers. This natural curiosity and desire to speak English effectively and without fear is important to note in enabling university students to develop confidence and L2 skills for their professional future. In an increasingly internationalized world many professional scientists and researchers are required to make oral presentations in English at conferences, posing and answering questions or interact with a non-Japanese client seeking dental or medical services, for instance. These situations can be full of apprehension unless there is a degree of familiarity with both generating and responding to questions. Although there has been research on the theory of teaching questioning skills it has mainly been in the context of writing or reading comprehension (Brown 2005), (Richards and Rodgers 2001). In the late twentieth century C.L.T. (communication language teaching), emerged, where language lessons are based on learning experience, this has developed more recently into T.B.L.T. (task based language teaching), which involves learning experience that has a non-linguistic outcome. The focus is for example, not on students being able to form perfect wh-questions but rather being able to confidently order a meal (Nunan 2003). This task based approach is related to the real world of real encounters and cultivates interactive skills beyond the classroom. A recent trend in university ESL teaching of science students has been that of poster-presentations, either in the traditional format of small groups presenting consecutively in front of a class or

with several groups presenting concurrently, based on the Science conference format. The latter especially is favoured as a model representative of T.B.L.T. Although poster and power-point presentations are a key vehicle for preparing university students for real situations in their professional life, long after their class-room English experience, it is the thinking process that underlies such tasks that is most meaningful. Olson (2006) comments—

‘Good questions allow learners to share information and allow for flexible responses’.

The Study

Science relies on generating questions, a skill that most university students can find hard. It is also evident that enquiry through asking and responding to questions allows students to take responsibility for their comments and most importantly to think about what they are saying. Through aiding students to research, understand and explain a topic for an oral presentation, through questioning the material gathered and their own and others’ ideas, it has become apparent how important an activity it is. Firstly it can enable students to become less reliant on rote or surface learning and be able to pinpoint and have more understanding of the relevant points about a topic. Secondly it can enable students to comprehend other presentations more easily by actively listening and responding by questioning the points that need clarification or that lead to another idea. Thirdly it can help in building confidence in exchanging ideas with others in L2. Fourthly it can be a first step towards preparing university students in eventual professional practice, for example comprehending and giving oral presentations at international Science conferences. The main aims of this study were to find out how ESL university students of science use questions in oral presentations, what question-types are commonly employed and identification of the main problems for students posing questions in this context in L2.

In July 2006, 120 first-year undergraduate students of Nihon University School of Dentistry gave oral presentations in English in groups of 3 or 4 students on a dental topic chosen by each group. Topics chosen varied from oral cancer to tooth-brush design. The oral presentations could take either a poster or power-point format and lasted for 10 minutes followed by approximately 3 minutes for reflection and 5 minutes for questions and answers relating to the presentation. Groups presented consecutively in front of the class over a 2 week period, having prepared for the previous 4 weeks. The poster or power-point presentations had to include—

- a) Evidence of research and understanding through visual images, key words and technical terms explained in easy to understand English.
- b) Evidence of original research through a survey devised and conducted by the students, consisting of questions about the dental topic aimed at their peers or other age-groups. Results were shown by graphs, diagrams, bar or pie-charts.

Some groups produced hand-outs or used realia such as a model of the jaw or dental tools to further illustrate their presentation. The presentations were assessed as a mini-test on the

course. Written material relating to the presentations and print-outs of the powerpoint slides were submitted to the author for this study.

Findings

A. The use of questioning was integral to the presentation, there were 4 main areas where this took place in L2.

1. Questions from students to the teacher.

This mainly occurred during the initial stages of briefing about the presentation. These questions were mainly students checking what was required of them, (eg. How long should I/we speak for?).

2. Questions from student to student within the presentation group.

This happened during the research period in class. These questions were mainly about identifying the dental topic, approach and area of individual research, (eg. Don't you think toothbrush design is a good topic?).

3. Questions from students to themselves and others in preparation for the presentation.

These questions tended to be analytical and helped to identify the most important information to understand and explain in the presentation. They fell into 2 broad categories—

i). Questions occurring naturally about the topic on analyzing information and technical terms, (eg. What is oral cancer?, How does a carcinoma form?, What is the survival rate for patients with oral cancer?) Often these questions later formed the structure of the presentation itself, becoming rhetorical and used to draw attention to key points.

ii). Questions designed for simple surveys about the dental topic, either to dental students in the class, faculty or to other age-groups, (eg. What kinds of oral cancer do you know of?, Have you ever had orthodontic treatment?, What is your favourite brand of toothpaste?). Some groups were surprised by their survey findings and used the information to focus their approach. One group felt that their peers were unaware of the merits of orthodontic treatment after surveying the other first year students and set out to prove its merits by using slides of the dramatic changes in one of the team's teeth over time by orthodontic treatment. This use of questioning has a diagnostic purpose—finding out key areas for research that haven't been considered before and will engage the audience.

4. Questions from the class audience to the student groups after presentations.

This type of direct questioning in a more formal, less intimate situation is often considered problematic in Japanese ESL university classes; '... open Q & A periods can be unsettlingly silent affairs' (Bayne, 2005).

From data collected from students (1), it seems that what is happening during this 'silence' is often hesitation, but more often reflection about how to form the question in L2. The more practice and familiarity given in thinking about and asking questions in this context, the more confident students can become. Students were asked to listen carefully to each presentation and

were given a short time to think about and write down 3 questions before being invited to openly ask questions. This helped students to listen more carefully and think more deeply about what was being explained in the presentation. Usually there was time for 3-5 questions, students raised their hands to indicate they had a question and the presenting group chose the questioner. Generally given the time restrictions questions in this category tended to use simple sentence structures, (How much does it cost?, Which toothbrush do you use?, Have you ever had your teeth straightened?).

B. There is a wealth of study on question-types including the standard taxonomy by Bloom (1956) and categorization of questions into ones that check information or genuinely seek it and whether questions have one correct answer or a range of possible answers by Nunan (1990). Wiederhold (1995) has also considered how learners respond to alternative question-types. The range of question-types employed by the dental students during their preparation for and actual oral presentation as outlined above, tended to fit into the simpler question types such as-

Yes-no questions : questions that require a yes-no answer only, eg. Have you heard of oral cancer?, Do you know anyone who wears dentures?, Have you ever used an electric toothbrush?

Wh-questions : questions beginning with the words which, what, when, why, where, who and how, that show the kind of information wanted, eg. What is your favourite toothpaste flavour?, Which is the appropriate sort of toothbrush?, How much do you think the treatment costs?

Choice-questions : questions requiring choice from several alternatives given, eg. Do you use a hard, medium or soft toothbrush?, Which do you think is better—an electric toothbrush or a normal one?, Do you have a preference for a curved or straight toothbrush handle?

However there was use of questions using modal verbs, which is more complex than using the Simple present, past and future verbs. These kind of questions, which use a more complex sentence structure are more difficult questions requiring a more complex reply. For example 'Where would you start cleaning your teeth first?'. Occasionally tag-questions were used (small questions attached at the end of a statement), for instance, 'In ancient times toothbrushes weren't used—why did we begin to use toothbrushes?' Rhetorical questions, which do not expect an answer but are an effective way of drawing attention to the content of a presentation were used by several of the student groups. Of the 30 groups presenting over half the groups used rhetorical questions during their presentations to draw attention to the most important parts. One fifth of the groups used over 3 rhetorical questions to focus the audience attention. The groups who didn't use any rhetorical questions had prepared less and generally produced poorer presentations with less visual impact and less interaction with the class. One group employed rhetorical questions 6 times in total: 'Have you ever had orthodontic treatment?', 'Would you like orthodontic treatment?', 'What is orthodontic treatment?', 'How long will the treatment take?', 'How much will it cost?', concluding with 'Why do dental students have a bad image of orthodontic treatment?' in the summing up. The use of so many rhetorical questions made it

very clear which parts of the presentation were most important and therefore easy to understand for the audience. Interestingly at least one member of this group is a returnee and has probably been exposed to the lecture style of native speakers of English.

C. Further consideration of the problems Japanese students encounter when posing questions in this context may be pertinent. As already mentioned, direct questioning in open question and answer sessions can present difficulties. Students are often not used to talking in front of the class and may be embarrassed of being 'wrong' in front of their peers and the teacher. Students may also be afraid of asking a question which is too easy or hard, which repeats information already explained or which the team presenting can't answer at that precise moment. The same 120 students were asked to write down what problems they had in asking questions during the presentations. Although at least half the students commented that they were ashamed to ask questions in front of the class, just as many stated that they wanted more time to reflect and think about the questions. Students often think of the question in Japanese and attempt to translate it into English, which takes time, the multi-tasking of listening carefully to a presentation and writing memos is probably possible for most students, being able to immediately form questions takes practice and familiarity. Students were also concerned about not having enough vocabulary or not understanding technical terms in L2 sufficiently. One student observed that although she'd written lots of questions down during the presentations, because she didn't ask any of the questions she didn't learn the answers. The direct relationship between interactive communication and the results it can yield had become apparent.

Conclusion

This study considered the use of questions in the preparation and delivery of oral presentations using poster or power-point in L2 by 120 dental first-year undergraduate students. Although this is a small group of students certain patterns can be detected. Oral presentations require some sort of questioning at each stage of preparation and delivery to develop thinking skills. Questions can be helpful in identifying key points from a mass of information about a topic. Questions used in a survey aimed at gathering original information about a topic can help to diagnose knowledge or opinion about a topic. Students tend to use simple sentence structures in questions used throughout the stages of researching, understanding and explaining, but do use rhetorical questions to some extent to draw attention to key points of the presentation. Being required to ask questions can encourage active listening on the part of the student. Students find it very difficult to ask questions in front of the rest of the class and want more time to consider their questions. These results suggest that students want to learn to question more effectively in L2 but need a range of support in developing their cognitive skills. Continually assessing and updating current teaching programmes using a variety of tasks to develop thinking and questioning skills such as brainstorming, mindmaps and considering different

points of view of a single problem, as well as guiding students in developing more complex sentence structures and question-types is essential. The more familiar the ESL student is with the environment of interaction through questions the more confidence can be built.

Footnote

1. 120 first year students at Nihon University, School of Medicine also made oral presentations on nutrition topics using poster and powerpoint format at the same time of the academic year, which was assessed as part of the course. Students from the Schools of Dentistry and Medicine were asked to write down what difficulties they had in asking questions during the presentations.

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