Student Perceptions of Lecturer Classroom Communication Style

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Abstract

The way a teacher communicates in the classroom is studied from the perspective of the university student. The sample consisted of students enrolled in a programme at a university that follows a blended learning system making use of a resource rich learning environment of lectures, tutorials, and online resources. Adult learners on Masters' programmes in Computing Science attending teacher led lectures in several locations (e.g., London, Hong Kong, Shenzhen) completed questionnaires describing five communication patterns. They are (a) challenging, (b) encouragement and praise, (c) non-verbal support, (d) understanding and friendly, and (e) controlling communication. Results of the data indicate that students rate communication patterns in significantly different ways. There were statistically significant relationships between both challenging and controlling communication and final course grades; challenging and encouragement/praise communication patterns were significant when data were analysed by cultural background such that Eastern and Western students rated the same teachers as having different communication patterns; there were significant differences on all five communication styles by gender. Findings indicate that teachers need to be aware of their communication style as it has differential effects for their students by their gender and culture, and may in some cases more significantly impact upon student's final grades.

Introduction

It is necessary when communicating for the recipient of a given message to be able to attend to and extract relevant information from a particular piece of input. It is assumed that the behaviour of participants in a social setting may influence others in that setting (Mullen, Bryant, & Driskell, 1997). It could be argued that in an education setting, not only is the content of a particular message vital, (e.g., understanding a given topic area) but so is the way it is communicated to a student.

It is therefore necessary that teachers are able to communicate effectively with their students. As the research to date has shown, it is important to provide feedback to teachers on their communication style as very often they are unaware of many aspects of their behaviour or the feedback they provide to students (Good & Brophy, 1991; Levy, Wubbels, & Brekelmans, 1992; She & Fisher, 2002). A student's perception of a teacher's behaviour may be influenced by a variety of other factors, such as affective learning (Anderson, 1979), cognitive learning (Gorham, 1988; Richmond, Gorham, & McCroskey, 1987; Richmond, McCroskey, Kearney, & Plax, 1987), the effectiveness of the teacher (Anderson, 1979), interactions between the student and teacher (Andersen, Norton, & Nussbaum, 1981), and general student performance (Matsumoto, Garside, & Roberts, 1991).

Multiple approaches to the study of communication exist (e.g., Hall, 1980, Petty & Cacioppo, 1986). For the purposes of this study, the model as described by Mullen, et al, 1997 is used. The current study focuses on student perception of a teacher and how that influences student module outcome (i.e., final class grade). While a vast generalisation, it is useful to categorise groups when studying behaviour based on cultural boundaries (Geertz, 1973). According to Geertz, researchers should acknowledge that culture may only be understood from the starting point of one's own culture.

For the purposes of this research, culture is used to mean a set of cohesive behaviours (Holliday, 1999). A distinction is made in the current research between Eastern (Confucian heritage culture) and Western (Socratic style) learning environments. Certainly there are differences in Confucian teachings between China and Japan or Korea, for instance, or Socratic in the USA vs. the Netherlands, but for the purposes of this study, the divide is made between Eastern and Western style education.

This is not to claim that there is homogeneity among Western or Eastern teaching behaviours; rather, it is that in this paper, 'culture' will be defined by Eastern (Confucian heritage culture) and Western (Socratic style) environments, as described by the research reviewed below. These distinctions have been made by others as well (e.g., Watkins & Biggs, 2001; Watkins & Biggs, 1996).

Salili (2001) claims that while there has been a good deal of investigation into Western student-teacher interaction, fairly little research has been conducted in Chinese schools. According to Biggs and Watkins (2001), good teaching is viewed in the West as teaching using a repetitious, teacher dominated room. This is not to say that nothing is known about the Chinese classroom, however, it appears from a review of the literature that a good deal of knowledge is based on the ideals of Confucius along with individual studies, as opposed to any meta-analytic ones (see for example Watkins & Biggs, 2001; Watkins & Biggs, 1996).

Communication and final grades

Undoubtedly, students perceive and develop impressions of a teacher's behaviours in part through the teacher's style of communication. That is, depending on the way a teacher communicates effects the impression the student has of him/her. Van Tartwijk (1993), using a classroom-observation instrument, found that 63% of behaviours in a classroom are accounted for by the students reported perceptions of their teacher. If the way the teacher communicates is indeed related to student perception, it is important to understand how varying communication patterns influence student outcome (e.g., grades).

Research indicates that teachers can make a valuable contribution towards creating a positive learning environment in classes (Christophel, 1990; Richmond, 1990). This is done through teacher interaction and/or communication with students (Wubbels & Levy, 1993). It logically follows then that the greater the teacher-student interaction and the more positive that interaction is, than the better the learning environment for the student and perhaps, the higher are the final grades. In fact, regardless of the taxonomy of teacher behaviours, this was found to be the case in the four studies named above.

Understanding/Friendly Studies conducted in three countries, the Netherlands, U.S., and Australia, have shown that friendly, helpful, and understanding behaviour from teachers is related to both higher cognitive outcomes as well as positive student attitudes (Fisher, Henderson, & Fraser, 1995; Fisher & Rickards, 1997; Wubbels & Levy, 1993). Similarly, other researchers found that when lecturers created an open and friendly atmosphere adult learners perceive the teachers as being more effective (Comadena, Semlak, & Escott, 1990).

Australian males, however, prefer lower levels of teacher input into student work and less teacher helpfulness than do females (Hansford & Hattie, 1989). According to van Tartwijk (1993), something as simple as a teacher smiling leads students to perceive teachers as more helpful, friendly, and understanding. Student attitude in Western classrooms (e.g., Netherlands, USA, Australia) is positively related to academic achievement (e.g., Mager, 1968).

Kim, Fisher, and Fraser (2000) report that Korean students' attitudes are higher in classrooms in which they perceive friendly and understanding behaviours from their teachers. A study in Taiwan indicates that understanding and friendly behaviour on the part of the teacher is positively related to higher student academic achievement (She & Fisher, 2002).

One may then wonder whether understanding and friendly behaviour is useful for module outcome in all classrooms (Eastern and Western style) or whether there is some other factor, such as the particular type of education system (Socratic vs. Confucian heritage), contributing to these behaviour's influences. This issue should be further explored.

Challenging

Both Good and Brophy (1974) and Walberg (1984) argue that teacher questioning and reaction to student answers are key factors in the interactions occurring between teachers and students. This type of challenging classroom, incorporating question and answer sessions, appears to promote relevance, encourage ownership of a given topic, assist students in their interpretations of material, and link new learning to what they already know (Deal & Sterling, 1997).

In several studies conducted in Taiwan, She (1998, 2000, 2001) found that the use of questioning and verbal reinforcement are very important facets of teacher behaviour (i.e., allowing students to link new information with what they already know, helping students in analyzing the new knowledge). At the same time, Pratt, Kelly, and Wong (1998) argue that in Chinese society adult students may think that their questioning of a teacher, such as in a question and answer session, is akin to the student questioning the teacher's competence. Others argue it could be viewed as a sign of disrespect (Salili, 2001). It may be the case then that older Chinese students would not respond well to a question and answer classroom style session.

The learning environment may be changing for the younger Chinese student population though due to the dynamic nature of globalisation, such that they may like a more challenging environment, with the opportunity to interact using a question and answer dialogue. As an aside, it is possible that questioning a teacher is seen as acceptable in a Confucian heritage culture classroom; however, the 'questioning' may be different than what the Westerner is expecting. This is an issue to be further investigated in this piece of research.

Controlling

Research has shown the controlling behaviour on the part of teachers does increase cognitive gains among students (Fisher, et al., 1995; Fisher & Rickards, 1997; Wubbels & Levy, 1993). However, student attitudes were not high in this type of learning environment even though achievement was. Broken down by gender, a study looking at Dutch students found that females perceive their teachers as being more dominant (i.e., controlling) than did males (Levy, et al, 1992).

A study by Hansford and Hattie (1989) indicates that Australian male students prefer an individualized, low teacher controlled classroom when compared with Australian female students. Such a classroom has high student independence to control work habits and behaviour, high level of student freedom to work at his/her own pace, and a high level of a student being able to conduct his/her own research. Certainly this has implications for teachers when assessing gender differences in their classrooms.

Specifically for the Eastern students, Pratt, et al (1998) believe that in Chinese society the teacher-student relationship may be compared to the father-son, or authority figure- subordinate, one. The role of teacher demands a level of respect for hierarchy and authority on the part of the student.

The teacher is expected to exercise a degree of authority over the material which he/she is teaching. The researchers further argue that Western society teachers may compromise their authority role in a desire to be liked.

While a teacher's behaviour towards the student may be friendly outside of the classroom, inside it the relationship must hold a certain degree of formality. Thus, based to some extent on gender and cultural background, students may respond differently to a controlling teacher.

Encouragement/Praise

Christophel (1990) and Richmond (1990) posit that teacher behaviours directly influence student motivation by increasing positive affect on the part of the student for the teacher and the subject. Motivation, which may be provided by teacher encouragement or praise of the student, enhances interest and involvement in class (Frymier, 1994). Motivated students report looking forward to attending lectures (Frymier, 1994).

Encouragement and praise of a student may lead to a virtuous cycle of more student motivation which may in turn lead to greater desire to learn, yet again increasing motivation. Unfortunately, it is not indicated in these studies whether encouragement and praise influence student cognitive outcomes.

A study conducted in Taiwan using final grade and a communication behaviour scale (described later) found that student achievement is increased when students feel that their teacher exhibits behaviours such as encouragement and praise (She & Fisher, 2002).

Non-verbal

While verbal messages are believed to impact cognitive aspects of communication, non-verbal messages appear to be responsible for affective types of communication (McCroskey, Sallinen, Fayer, Richmond, & Barraclough, 1996). Babad (1992) argues that non-verbal behaviours are so important in academic settings because they may express true feelings or emotions that are hidden when conveying information in a verbal-only way. Non-verbal behaviour may also regulate verbal communication (Philippot, Feldman, & McGee, 1992).

Student perceptions of teacher's non-verbal behaviour is related to student reports of the teacher's interpersonal behaviour in general (van Tartwijk, 1993). Although a broad generalisation, presumably this means that the more positive non-verbal behaviour the teacher exhibits, the more positively the student feels about the teacher. Certainly students interpret behaviours differently, but in an effort to draw conclusions about how particular behaviours impact classrooms, such a generalisation is warranted. She (1998, 2000, 2001) observed that non-verbal behaviours in Taiwanese classrooms has shown the importance of using such communication styles and that student achievement is higher when students believe their teachers use positive non-verbal behaviours in the classroom.

Non-verbal behaviours associated positively with cognitive learning are things such as eye contact and smiling (McCroskey, et al, 1996). Factors such as these may influence how a message is perceived. That is, the content of the message may be distorted or incorporated in an unexpected way due to the irrelevant factors such as eye contact or smiling, interfering with the actual message (Petty & Cacioppo, 1986). Babad (1992) goes as far as to claim that when both verbal and non-verbal communication channels are used, the non-verbal ones should be thought of as more truthful and revealing of actual held beliefs.

In fact, if non-verbal communication is thought of as more revealing of actual beliefs and students are aware of their teachers' underlying feelings towards them, the non-verbal behaviours may contribute even more dramatically than verbal behaviours to teacher effectiveness (Philippot, et al, 1992). It should be clear then that non-verbal aspects of communication in a classroom cannot be dismissed (Philippot, et al, 1992).

Effects of Communication

Both intentional and unintentional communication behaviour may influence student outcome in a particular classroom (Babad, 1992). It is unclear at present if differential treatment towards students merely aids some in attaining at higher levels, or actually lowers the achievement level of those students who receive a less stimulating environment. Perhaps this would depend on how explicit the teacher is in conveying or hiding the differential treatment (non-verbally, controlling manner).

Those who focus on communicating their 'rightness' with little regard for interaction with the students become ineffectual as teachers (Osterman, 1993). Nonetheless, knowing how students perceive teacher communication behaviour and how it affects module outcome, could aid teachers in thinking about how to positively enhance their classroom environment. It is anticipated that this would be the case in both Eastern and Western classrooms; however, the behaviour may manifest itself differently based on cultural norms. In the current study, only Western style classrooms are investigated albeit partially in an Eastern society.

Communication and demographics

Mehrabian's (1969) seminal work in culture posits that it may influence a student's perceptions of his or her teacher's behaviours. More recently, research on the impact of teacher behaviours found that cognitive learning did not differ among African-American, Asian-American, Hispanic, and non-Hispanic Caucasian groups of students (Sanders & Wiseman, 1990). Research on a blended learning programme (to be described later) assessed module outcome scores for students based on learning location (i.e., London, Hong Kong, Cairo) (Sadler, Bakry, Chera, Hatzipanagos, Milankovic-Atkinson, & Murphy, 2002). They found an increase in outcome scores across the three locations over time, although most dramatically in Hong Kong.

The conclusion drawn by the researchers to explain the increase is that the teacher behaviour changed over time such that the teachers were able to assist their students in doing well on their final exam (Sadler, et al, 2002). Yet the Hong Kong teachers altered their behaviours most which led to the most dramatic changes on module outcome. These studies spanning a 30 plus year time period may be indicative of the fact that teacher behaviours are important contributors to student success regardless of ethnic background; they warrant continued exploration.

Perceptions of teacher communication may be influenced by various behaviours in different cultures (McCroskey, et al, 1996). Cultures should not be thought of as individuals living in different parts of the world; rather, cultures should be considered as sociopsychological entities (Lee, Matsumoto, Kobayashi, Krupp, Maniatis, & Robert, 1992). An individual who considers herself Chinese, even if she is living in London, may have more of a Chinese cultural personality than an English one. Culture as a concept may be better defined by an individual rather than arbitrary criteria. For research purposes however this is difficult to achieve.

In the current study, participants self-defined their cultural background in an effort to eliminate arbitrary criteria to determine their background; the generic terms of Western and Eastern serve as useful proxies in enabling a study of this sort to be carried out. Finally, with respect to gender

explicitly, a number of studies indicate females tend to perceive their learning environments more positively than do males (Fraser, Giddings, & McRobbie, 1995; Fisher, Fraser, & Rickards, 1997; Rawnsley & Fisher, 1997). For example, Taiwanese females report their teachers as being more understanding and friendly than do males (She & Fisher, 2002). Taiwanese males, on the other hand, perceive their teachers as exhibiting more controlling-type behaviours than do their female counterparts (She & Fisher, 2002). While this is only one study, it does lend credibility to the idea that there are gender-based differences in perceptions of teacher behaviours.

Global Campus

Global Campus (GC) is a distance learning project originated at a university in London, UK. With overseas partners, the university strives to offer a blended learning mode for both postgraduate and undergraduate students. Blended learning allows for face to face and electronic teaching. Course materials are available in a VLE and on a CD-ROM.

Students attend a weekly lecture at a learning resource centre close to where they live. Administrative support is provided at the university in London as well as in the distance location (e.g., Hong Kong). Students are able to contact the lecturer directly in London, their local tutor at the distance location, and administrative components in either location for assistance. The degree programmes are also run in the conventional, face-to-face mode in the UK.

GC was created to exploit the advantages brought by the development of flexible learning arrangements for London-based students as well as to efficiently deliver high-quality courses to partner institutions abroad (Murphy, Bakry, Milankovic-Atkinson, Sadler & Woodman, 2001). The programme brings a Western style educational system (based at a UK university) to a traditionally Eastern (Confucian heritage culture) society. Several research projects are ongoing to determine the effectiveness of the blended learning environment as compared with the conventional, face-to-face one as well as the introduction of the Western programme to the East. The following study is one such piece of research.

The current study aims to assess whether perceptions of communication patterns vary among students enrolled in a Masters of Computing Science programme. The study evaluates various types of communication in two locations (UK, China) to determine whether culture, gender, and module outcome are related to perceptions of communication.

Method

Participants

There were 141 participants who took part in the study. All are MSc students in Computing Science. Seventy-eight of the participants are male, 40 are female and the remainder did not report their gender. Seventy-five participated while enrolled as students in modules in the UK.

These students were given the questionnaire in their classroom in London. The majority of these are, for the purposes of this study, considered the European sub sample. There are several (28) who make up the Indian subcontinent sub sample. This group was subsequently omitted from analyses as there were both not enough of them and they were not cohesive enough culturally to consider them as one unit. Therefore, 47 participants were included in the analyses from London (all citizens of EU countries). Sixty-six of the one hundred forty-one are Chinese students. The total usable sample was 113, including 47 Western and 66 Eastern participants. The Chinese students are based primarily in the south of the country, in and around the Hong Kong region [this does not make sense] city (e.g., Hong Kong, Shenzhen). After completion, the questionnaires were mailed back to the region. These

students were given the questionnaire by the GC local administrative offices in their home [this does not make sense] searchers in London.

It is worth noting that while individuals all come from different backgrounds, grouping participants by sociopsychological means is useful. The European students are members of EU countries and were previously educated in Western style classrooms. While there are certainly cultural differences within the European group, and for that matter any group that is classified based on country or location of origin, since academic background was being investigated, it was necessary to group students who came from Western and Eastern style classrooms.

The Chinese group originated from one country, albeit a diverse and large one, and were educated in a Confucian heritage style classroom (i.e., Eastern style). All students involved in the research who provided their email addresses were entered into a prize drawing as a thank you for their participation. One student won a £20 voucher to an online book store.

Staff and students were asked if they wished to be involved; participation for both was voluntary. Students provided specific ratings for lecturers. These were not of interest for this study. Rather, the composite data across lecturers were used. Lecturers came from Eastern and Western backgrounds; they were male and female.

Materials

It was determined that quantitative data should be collected for the following reasons. First, an existing questionnaire used with a Western and Eastern sample had been used in several previous studies (e.g., She & Fisher, 2002). Second, due to the nature of data collection across cultures, it was anticipated that a level of rigor would be lost if the research needed to rely upon assistants at the distance sites to collect qualitative data. Third, analysis of quantitative data provides a foundation for comparison that the researchers did not feel was possible with such a diverse group of students if qualitative data were used.

The Teacher Communication Behavior Questionnaire (TCBQ) (She & Fisher, 2000) was used to determine student perception of variations in communication style with lecturers. The questionnaire is comprised of five scales, or types of communication. They are (a) challenging, (b) encouragement and praise, (c) non-verbal support, (d) understanding and friendly, and (e) controlling communication.

Each question is answered by circling a number, 1 through 5, on a Likert scale. The scale ranges from almost never (1) to almost always (5) with interim choices of seldom, sometimes, and often. The use of a questionnaire with a Likert scale was desirable for this sample because it provides a visual scale (1 through 5 evenly spaced on a page) for participants when expression of perceptions in English language varies across comparison groups.

Reliability was estimated by She and Fisher (2000) in Taiwan and Australia using Cronbach's alpha coefficient. The coefficient ranged between .86 and .93 in both countries on the five scales. Validity was measured by principle components analysis. According to She and Fisher (2000), the 40-item questionnaire was structured based mainly on the factor analysis and in small part on the interviews conducted with the students. Discriminant validity measures ranged from .06 to .45, indicating small enough correlations between the scales to be satisfactory (She & Fisher, 2000). While the questionnaire was being validated by She and Fisher (2000), translations and back translations were done to increase the cultural appropriateness of it.

The questionnaire was initially written in Chinese, then translated to English. A back translation was done by people who were not involved in the initial translation. Modifications of both the Chinese and English versions occurred following the back translation. Only the English version was used with the current sample. Although a number of the participants are Chinese, the MSc programme is structured such that the students attend lectures in English. In order to enrol in the programme, students must have achieved a minimum competency, to learn and be assessed, in English. As this research was connected to the university programme, a decision was made to provide a questionnaire about English language lectures in English.

Gender, culture, and module outcome were measured. Gender was measured by having the participant circle either 'male' or 'female'. Culture was measured by asking two questions, one about country of birth and another about time spent in the country of current study. These were open-ended questions forcing the participants to fill in their response. This was done in an effort to allow the student to select his/her own cultural background as previous work indicates that culture may be more individual than one's ethnic background (Lee, et al, 1992).

Module outcome was measured by retrieving the final scores each student received in the module. The lecturer gave the student a final grade that he/she saw fit and that was the number used for the module outcome variable. This grade was determined by a combination of assessment from a proctored exam and course work. The lecturers did not see the questionnaires completed by the students and do not know specifically what each student wrote about the lecturer's communication behaviours.

Following the final assessment period, lecturers submitted grades for each student. Grades were submitted approximately four weeks after the module ended. Researchers matched the student grade to the student questionnaire (via student ID number). Questionnaires were not anonymous but students were reassured that lecturers would not see the student questionnaire.

Procedure

Questionnaires were distributed to the London-based students in the spring of 2004. Two researchers attended lecture sessions to disseminate and collect the questionnaires, and to respond to questions about the research. Questionnaires were distributed in two ways with the Chinese students. First, an electronic copy of the questionnaire was sent to each of the locally run GC administrative offices (e.g., Shenzhen, Hong Kong). Other Chinese participants were attending a course in London beginning in late spring of 2004. Two researchers attended one of their first meetings to disseminate and collect the questionnaires, as well as answer questions. Completion of the questionnaires took from 15 to 30 minutes. The students were asked about perceptions of their teacher who they had in the module in which the data were collected. Each student reported on one lecturer's behaviours. The study received approval from the university psychology ethics review committee. Permission was also obtained from the questionnaire authors to use the instrument in the current study.

Hypotheses

The study models earlier work comparing communication patterns at the secondary school level in Australia and Taiwan (She & Fisher, 2002; She & Fisher, 2000). It uses a similar framework to determine student perceptions of communication at the university level. This model was copied because the researchers felt that the work of She and Fisher (2000, 2002) well exemplifies what is currently being investigated. This research was designed to examine module outcome, culture and gender differences based on perceived communication patterns.

The closest study done previously to this was She and Fisher's. Several hypotheses were developed.

1) Hypothesis one is that there is a positive relationship between student perceptions of teacher communication patterns and module outcome (final class grade). That is, the larger the degree to which students believe teachers interact with the students, the higher the module outcome is for the particular student.

2) Hypothesis two is exploratory. It is expected that there will be cultural differences with the Chinese and UK students reporting different degrees of understanding/friendly, encouragement/praise, non-verbal, challenging and controlling behaviours from their teachers. However, no predictions are being made with respect to Chinese vs. UK-based student's ratings.

3) Hypothesis three is that female students will report greater levels of all types of behaviour from their teachers than will male students.

Results

A multiple regression and follow-up paired analyses provided some support for hypothesis 1. Correlational analysis would not provide answers to the questions of causation (Scaife, 2004), therefore multiple regression was used for the analyses. It was believed that there would be a significant relationship between grades and the five communication factors which there was, ($F_{(1,96)} = 3.01$, $p < .05$). However, only two of the five communication factors were significant in the post-hoc tests, challenging ($F_{(1,96)} = 2.48$, $p < .05$) and controlling behaviours ($F_{(1,96)} = 2.43$, $p < .01$) such that higher grades were received by the students who perceived their teachers to be more controlling and/or challenging.

There were no significant findings with respect to grades for the encouragement and praise, non-verbal, and understanding and friendly behaviour variables. Table 1 shows the means and standard deviations for the five behaviour variables and grades.

Table 1: Communication behaviour means and standard deviations

Variable	N	Mean	SD
Challenging	113	3.73	.72
Encouragement/Praise	112	3.46	.80
Non-verbal	113	3.56	.73
Understanding/Friendly	113	4.11	.69
Controlling	112	3.14	.81

Hypothesis 2 was developed in an attempt to analyse the cultural differences among this sample. A multivariate analysis of variance for hypothesis 2 was conducted due to the type of data collected (Bray & Maxwell, 1982). The MANOVA was significant, Wilks' Lambda ($F = 1.48$, $p < .001$). Post-hoc tests indicated significance for culture on two of the communication variables: challenging ($F = 2.55$, $p < .05$) and encouragement and praise ($F = 3.18$, $p < .01$). The mean for the encouragement/praise variable was 3.74 (SD= .61) for the Chinese and 2.22 (SD = .91) for the London sample. For challenging behaviour for the Chinese (mean = 3.56, SD = .87) and for the London group (mean = 2.31, SD = .77), partially supporting the hypothesis that there would be differences between the groups. The Chinese perceived greater levels of both encouragement/praise and challenging behaviour from their lecturers.

Support for hypothesis 3 was determined by the same multiple analysis of variance as for hypothesis 2. There was a significant difference in gender with respect to the five communication factors (F $(1,112) = 914.04$, $p <.01$). Follow-up t-tests indicated significant differences between gender for all five factors such that the female students rated the communication factors as being more relevant than did the males: challenging (t $(1,112) = -32.09$, $p <.01$), encouragement and praise (t $(1,112) = -24.32$, $p <.01$), non-verbal support (t $(1,112) = -26.23$, $p <.01$), understanding and friendly (t $(1,112) = -35.56$, $p <.01$), and controlling (t $(1,112) = -19.61$, $p <.01$).

Discussion

In the broader academic context, perception of teacher communication is an important facet of learning. Learning, and by extension education, is also more than a cognitive exercise; it has progressed to be an emotional experience as well (Weiner, 1986). The way a student perceives the communication patterns of his or her teacher may effect a number of academic correlates, e.g., student performance (Matsumoto, et al, 1991), effectiveness of the teacher (Anderson, 1979), or cognitive learning (Gorham, 1988; Richmond, et al, 1987a; Richmond, et al, 1987b).

Teachers may have a strong influence through their perceived communication patterns on how well students learn information and also how they feel about the information they have learned (Christophel, 1990; Richmond, 1990). Through their communication skills, teachers are able to make contributions toward the creation of a positive learning environment for students (Wubbels & Levy, 1993). Certainly the best way to enhance students' cognition would be for teachers to ascertain the way students learn and then alter their own teaching communication style to each student (Dimitrova, et al, 2003).

Teaching style from the Dimitrova, et al (2003) study and communication patterns as described in the current one are connected (e.g., a challenging communication behaviour implies a particular way of teaching). Teachers may want to be aware of different learning styles and how their communication behaviours in teaching may unevenly assist some students while inhibiting others, and attempt to affect styles within each class. As has been demonstrated by this study, different types of communication styles are connected to module outcome.

While the challenging and controlling communication behaviours were positively and significantly related to module outcome, it was expected that encouragement and praise, non-verbal support, and understanding and friendly behaviour variables would also be positively, significantly related for some of the students (Babad, 1992; Fisher, et al, 1995; Fisher & Rickards, 1997; Kim, et al, 2000; Wubbels & Levy, 1993). The hypothesis predicted that greater levels of interaction between teachers and students would result in higher module outcome scores.

Many view teachers who challenge their students to in fact help their students achieve at higher levels (Good & Brophy, 1974; Walberg, 1984; Wubbels & Levy, 1993). Challenging behaviour may be demonstrated, for example, by teachers asking questions in class. Questioning in class is has been shown to assist students in learning (Deal & Sterling, 1997; She, 1998, 2000, 2001). Whether this is due to more study time, alertness in the lecture for fear of being called upon and not knowing the answer, or other reasons, being challenged has been shown to lead to higher academic achievement (Good & Brophy, 1974; Walberg, 1984; Wubbels & Levy, 1993).

Controlling behaviour paradoxically may lead to a mix of outcomes depending upon individual responses (Fisher, et al, 1995; Fisher & Rickards, 1997; Wubbels & Levy, 1993). There are instances in all environments in which an individual who is too controlled will rebel thereby not reaching the goal the controlling individual had for him. At the same time, there are instances where controlling

behaviour leads to desired and higher outcomes. The latter was hypothesized for the current study. Specifically, it was thought that any sort of behaviour by which the teacher interacted with the students would lead to a higher module grade (i.e., the Hawthorne Effect). This hypothesis was supported by the research.

Encouragement and praise was anticipated to assist students to achieve higher grades. It is unclear why encouraging students in the classroom did not enhance student grade as was predicted in hypothesis 1. It is possible that the types of encouragement and praise that were given by this group of teachers were of a kind nature, rather than a helpful one. That is, to encourage students in such a way that they are confident about their academic abilities, translating into an altered student behaviour and module outcome, may be different than simply providing encouragement to a student. An idea such as this needs to be further explored.

Hypothesis 1 predicted that non-verbal support would enhance the student's module outcome. Non-verbal support, however, may not be a strong enough way of communicating in the lecture environment to elicit higher grades. One may speculate that a teacher may be too remote from the student (physically far away while teaching, unable to interact 1-to-1) such that non-verbal support does not have a direct impact on grades (Babad, 1992; McCroskey, et al, 1996). In the current study perhaps this was the case as non-verbal support did not have a statistically significant effect on module outcome.

It was also predicted that understanding and friendly behaviour would be significantly related to higher academic achievement (Fisher, et al, 1995; Fisher & Rickards, 1997; Wubbels & Levy, 1993). It was anticipated that a teacher who is understanding/friendly increases student's desire to please the teacher, thus motivating the student to try harder. However, this sort of finding did not surface and understanding/friendly behaviour was found to be unrelated to module outcome. It may be possible that a teacher who is quite understanding/friendly provides behaviour allowing the student to believe she will do well in the module regardless of how hard she tries. People often translate understanding/friendly behaviour into being liked and doing well at something (van Tartwijk, 1993). It is of course possible that understanding and friendly behaviour on the part of the teacher led to both desire to please and lack of motivation in working hard because the student assumed she would do well in the module. This may be why understanding and friendly behaviour had no relationship to module outcome.

It is important that teachers are aware that at least based on the findings from this study, controlling and challenging behaviour are related to module outcome. If it is possible for teachers to challenge their students, and to have the students perceive the teachers as controlling, it may increase module outcome for those students. Of course teachers would need to engage in this behaviour and have students perceive this behaviour. The two step process this requires may be difficult to promote.

There were some significant relationships between culture and the communication variables as would be expected based on the work of Salili (2001), Watkins and Biggs (2001), Watkins and Biggs (1996) and others. The multivariate analyses furthered clarified these findings indicating that two of the communication variables, challenging behaviour and encouragement and praise, varied with cultural background. The Chinese and European subgroups differed significantly on their ratings of both challenging behaviour and encouragement and praise type behaviour.

The Chinese group (including the students based in China and those in London who arrived from China within one month prior to data collection) rated the teachers as both more challenging and having higher levels of encouragement and praise. While it was predicted that there would be

differences in ratings on the communication variables between the Chinese and European samples, no predictions were made with respect to the differences. In an effort to explain these findings, it might be the case that the Chinese students do not expect their teachers to have traditionally positive (e.g., encouragement) behavioural traits in their teaching roles. The Chinese may expect teachers to present the material and not engage with the students in much beyond straightforward teaching, vis-à-vis Pratt et al (1998)'s work and Confucian heritage culture education settings (Watkins & Biggs, 2001; Watkins & Biggs, 1996). This may include a challenging style but it was unexpected on the part of the student that the teacher would exhibit encouragement/praise type behaviour. The particular MSc programme studied tries to encourage a Western-based approach to teaching which may account for this finding (Murphy, et al, 2001). The students are Chinese and often taught by Chinese lecturers; nonetheless, the programme requires that the lecturers teach in a Western style, as described previously. It would be interesting to know if the UK-based programme has influenced the teachers of the Chinese students to engage in more Western-style teaching behaviour (i.e., encouragement/praise). This could explain why the Chinese students have rated the teachers as having such behaviours. While it makes logical sense based on Confucian heritage style teaching (http://www.china.org.cn/english/China/94272.htm) that the Chinese students would rate their teachers as being more challenging, it would also imply that they would perceive teachers to have more controlling type behaviour. This was not supported and requires further investigation.

It is also interesting to note that the European students did not rate their teachers as having understanding/friendly, encouragement/praise, and non-verbal support behaviour. Based on anecdotal and not prediction-based work, it might have been expected that teachers would be rated in such a way. At the same time, because the London based students expect their teachers to act more as a friend (e.g., calling the teacher by first name) they do not feel that a slight hint towards understanding/friendly, encouragement/praise, or non-verbal behaviour is truly behaviour of that sort. Rather it is just natural and in order to elicit perceptions of teacher behaviour on those variables from the European sample (those raised and educated in EU countries), there needed to be a far more dramatic display of those behaviours. This needs further investigation.

When implementing a programme such as GC, a programme that promotes use of a Western designed Masters degree in a not fully European setting, one must be aware of cultural pitfalls (Murphy, 2006). The Chinese students may be expecting a programme far different from what they are receiving. Perhaps this is why they rated the teachers as encouraging/praising. Because culture influences how groups of people perceive a given situation (Shiraev & Levy, 2004), it is crucial that teachers are aware not only of how their culture is generally perceived by students from a different culture, but also how their communication behaviours play into the student's stereotypes of the teacher's culture.

In turn, naturally, teachers may want to make an effort to understand how communicative behaviour alters student performance. Differences based on cultural background should be further explored. As education tries to become more global it is essential to develop an understanding of how communication behaviour, influenced by culture, effects perceptions of teachers and more substantially, module outcome.

It was predicted that female students would report higher levels of all five types of communication behaviour. This hypothesis was supported regardless of lecturer gender. Lecturers were both male and female and female students rated male and female lecturers higher on the communication variables. Perhaps the female students were more aware of teacher behavioural styles while the male students focused primarily on course material. It might be then, that when working in academic settings, males process content information while females process content and

behavioural style to a greater extent. Folklore often provides examples of females being more aware of contextual differences and this might have surfaced in a research setting. Research indicates that females perceive their learning environments more positively as well (Fraser, et al, 1995; Fisher, et al, 1997; Rawnsley & Fisher, 1997). That research may be corroborated by the current findings in that perceiving greater levels of communication is positive and females did in fact perceive higher levels of teacher communication.

It is important then for teachers to be aware of their communication behaviour so that females as a group are not unfairly disadvantaged, or distinctly advantaged, over the male students. In this study, ratings of teachers by females versus males were not significantly related with module outcome. However, that does not necessarily mean that teachers do not have to be aware of their communication styles which did vary significantly with gender and how it influences module dynamics. Males and females perceived communication behaviour differently, but those differences were predicted (Fraser, et al, 1995; Fisher, et al, 1997; Rawnsley & Fisher, 1997). As they were expected based on past findings, it is likely that teachers are already aware of such differences and are attending to them. Research of this sort should still be funnelled to those in education settings working with students to ensure that there is awareness of the effects of communication behaviour on module outcome.

Limitations

There are several limitations to this study. First, the study looked at two cultures within a select population (i.e., students in one Masters programme). Thus, one should be cautious when generalizing these findings. It may be that the Chinese and European samples of MSc students at this university are distinct subsets of Chinese and European computing science MSc students.

It would then be inappropriate to assume that these findings are useful for all international Masters degree programmes. Additionally, the culture of a given MSc programme itself might vary widely. This may be a caveat to generalisability and therefore research reported here should be corroborated by other work.

Another limitation is the data itself. While the questionnaire provided a good deal of information about students in the programme, using observation techniques and interviews in addition would likely provide richer data and more rounded picture of the communication behaviour. In the future, it might be useful to triangulate these data collection methods to more fully understand communication in the classroom.

Future Studies

This piece of research provides some evidence for the importance of communication style in the classroom. However, many questions remain to be answered. For example, is the student participant group used in this study representative of Masters degree students in other programmes, or other universities? This study could be expanded to investigate whether there are differing impressions of teacher behaviour at other universities or different programmes within the same university.

Another variation on this study may be to use additional data to further understand opinions of these students. Observations, interviews, or teacher questionnaires may be useful in understanding more fully what communication style in a classroom means in relation to module grade outcome, cultural background or gender. It may be worthwhile to look at other patterns of communication (i.e., permissive style, interactive teaching) to see if they alter module outcome. Perhaps the

communication styles investigated here are only some of the important behaviours that influence grades. Other behaviour styles may also affect module outcome.

Taken together, this study sheds light on how communication behaviour may affect module outcome. It is important that findings such as those reported in this study are provided to teachers so that they are aware of how their classroom behaviour may affect students and their grades.

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