

Novice and Experienced Teachers' Instructional Activities in the Classroom

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This study was designed to compare the instructional activities of trained and experienced teachers (ET) and untrained and less experienced teachers (LET) in the classroom setting. A teaching acts model (TAM) for analyzing routines was suggested. In this method, an instructional routine was decomposed into basic elements called teaching steps and teaching acts. Two instruments, the Description of Instructional Processes (DIP) and the Teaching Processes Observation Schedule (TPOS) were developed to help to describe and evaluate the teaching activities and routines. Seven ET and five LET from a convenient sample of six secondary schools in Hong Kong were observed, videotaped, and interviewed.

Results indicated that most of the teaching activities of the ET and LET were executed as instructional routines that were activated by content progress rather than by students' behaviours. Also, teaching activities consisted mainly of three component areas of exposition, interaction, and classroom management. In terms of methods, both the ET and the LET commonly used the exposition approach, the textbook and the chalkboard. But, the ET showed better management skills, such as being more firm and assertive in teaching, thus producing better results. Findings of this study have applications in the study and improvement of teaching in the classroom.

Teaching is indeed a highly complex activity including many facets that can be approached from different standpoints. A comprehensive review of these standpoints or paradigms is given by Shulman (1986). One of the current lines of research on teaching is the study of the development of expertise in pedagogy (Berliner, 1986; Chi, Glaser & Farr, 1987). By comparing novice and experienced teachers' instructional activities in the classroom, one can have a better understanding of the development of teaching expertise. The information collected thus has applications in designing teacher education programmes.

Following this line of thinking, this present study intended to find out the differences in teaching and management between teachers who are trained and experienced (ET) and those who are untrained and less experienced (LET). More specifically, the aim of this study was to compare the instructional routines of these two types of teachers. This present author hypothesized that most of the teaching processes in the classroom are

conducted in the form of instructional routines. This is a reasonable conjecture because the daily activities of most professions, e.g., medical, engineering, management, legal, and so on, have a schedule to follow. If teaching is not conducted in a regular pattern or sequence, it would indeed be difficult for students to follow the instruction. Some studies of instructional routines have been reported in Hong Kong, for example, Siu and Siu (1988) used a more quantitative approach to study the teaching of economics. However, this present study takes a different approach by using a more qualitative approach. In addition, a model was developed to describe and analyse the instructional routines.

Describing Instructional Processes

To qualitatively describe and analyse instruction, particularly those that occur during teaching (i.e., the interactive phase of teaching), is challenging and important. It is challenging because of the difficulty in defining and delineating a complicated process in a concise and clear language. It seems that very few reports have been published in this area. It is also important to study the routines because they form the

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“grooves” of behaviours that can become more and more “deeply cut” and permanent. Ineffective routines should be identified early, otherwise such behaviours become habitual and therefore difficult to be corrected. By analyzing routines, we are able to identify and understand the strengths and weaknesses of our classroom behaviours.

Although the study of instructional routines is becoming popular, the concept of an instructional routine and the method to describe and delineate it are still open to contention. From the theoretical perspective, there are at least two taxonomic levels in defining routines, namely, the lower or the mechanical level, and the higher or the cognitive level. At the lower level, a routine is defined as “a more or less mechanical or unvarying performance of certain acts or duties” (Unwin & McAleese, 1978). It is a kind of stereotyped action of the teacher when not engaged in thinking (Morine, 1973). At the higher level, a routine is defined as the result of a long professional learning process, with a gradual “abbreviation” of control points in the complex teaching activity (Lowyck, 1984). By the use of routines, experienced teachers have a better chance to attend to other simultaneous events occurring in the classroom. Berliner (1986) quoted that expert pedagogues used routines to record attendance, to handle chorus responding, to start lesson segments, and so on. Personally, I prefer to take the cognitive viewpoint of routines because I think the ET and the LET would be best discriminated from this approach.

From the operational perspective, it is important to identify the critical attributes of routines and to delineate their boundaries so that routines can be described and analysed. However, few such studies have been reported in the literature. Although many forms and inventories (see Arends, 1989) are available for rating and describing classroom instruction, they are not suitable for the study of interactive instructional routines, because they are used for making a summative judgment of teaching rather than for making a description of the teaching processes. I think, in order to describe a routine, different approaches can be used, depending on the level of details required in the description.

Firstly, routines can be recorded in the “video mode” which can capture the maximum amount of information. Secondly, routines can be recorded and described verbally, thus resulting in the “transcript mode”. Thirdly, routines can be

represented by indicators, such as the lecturing routine, the questioning routine, and so on, thus forming the “indicators’ mode”. Because of the neatness of this method, the indicators’ mode is commonly used in quantitative analysis. Each of these three modes has advantages and disadvantages. In terms of the ability to depict the actual classroom processes, the video and the transcript modes are more informative than the indicators’ mode.

In addition to these three modes, I would add a fourth one temporarily called the “teaching acts mode.” In terms of the capacity to retain information of the actual teaching processes, this mode lies somewhere between the transcript mode and the indicators’ mode. In this teaching acts mode, teaching processes are described in terms of a sequence of teaching steps and teaching acts. The use of this mode is discussed in the following.

Teaching Acts and Routines

My hypothetical model structure of an instructional routine is shown in Figure 1.

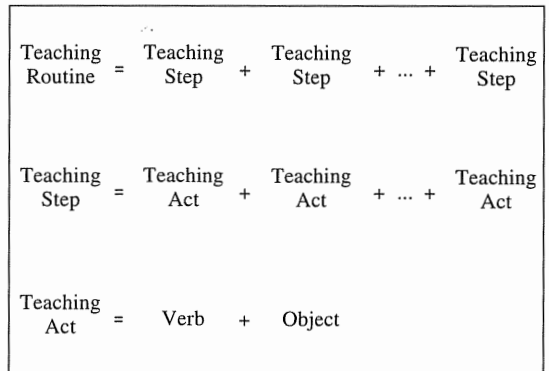


Figure 1. *Structure of an Instructional Routine.*

Note. Examples of teaching acts are: tell stories, show examples, present argument, solve problem, ask questions, ... and so on.

Although very often the object is present in the act, it is not essential, e.g., “teacher smiles”, “walks around”, ... and so on.

In this model, a teaching process or routine is conceived to be consisting of teaching steps which in turn contain the teaching acts. The steps and or the teaching acts which are regularly practised are the instructional routines. In other words, a routine is operationally defined as a sequence of repeating steps and acts. Some teachers might use the one-

step routine consisting of only one act, such as purely talking all the time to the students. This one-act routine is normally not recommended for classroom use. Nevertheless, the quality of this single talking routine depends also on the meaning and significance of the message itself. However, experience generally indicates that the more the variation of teaching steps and acts, the better is the teaching.

Well, what then is a teaching act? As shown in Figure 1, it is defined as a teaching behaviour depicted by a verb with or without an object. This verb shows the teaching behaviour, and the learning domain usually acts as the object of the verb, for example, "explaining verbal knowledge", "showing examples", "proving rules", "presenting arguments", "looking at students", "telling stories", "smiling", "ask questions", or "writing words on board", and so on.

In order to facilitate the identification and description of these teaching acts, I have constructed an inventory entitled the "Description of Instructional Processes" (DIP) which includes two parts. Part One describes the instructional processes, containing four sections: I, exposing and demonstrating; II, interacting; III, giving practice, reviewing and evaluating and IV, learning domains. Illustrative teaching verbs are given under the first three sections. Under section IV is a list of domain elements that may serve as the objects of the verbs.

Part Two of DIP describes the processes in managing student conduct, containing two sections: I, essentially preventing misbehaviours; and II, essentially correcting misbehaviours (including the management of good behaviours as well). In each section, illustrative verbs indicating specific management behaviours are given.

In order to help to rate the quality of the different types of teaching processes, I have also developed a Likert-type four point scale instrument, entitled the Teaching Processes Observation Schedule (TPOS) which follow roughly the organization and the theoretical structure of the DIP. As an example, there are four items to rate the quality of teaching rule:

- 1) Ensuring that Ss understand the prerequisite knowledge of rule:
 - 1. Rare 2. Sometimes 3. Often
 - 4. Very Often 0. N/A
- 2) Use evidence to prove a rule:
 - 1. Rare 2. Sometimes 3. Often
 - 4. Very Often 0. N/A

- 3) Explain the why of rule:
 - 1. Rare 2. Sometimes 3. Often
 - 4. Very Often 0. N/A
- 4) Show applications of rule:
 - 1. Rare 2. Sometimes 3. Often
 - 4. Very Often 0. N/A

In the above example, "Ss" stands for students and "N/A" for "not applicable." The TPOS also includes a "Classroom Management Effectiveness Scale" that is used by this researcher to rate the quality of classroom order observed in this study.

Data Collection

In conducting this study, a convenient sample of six secondary schools as shown in Table 1 was chosen.

These schools were selected according to two dimensions, namely, the source of funding and the medium of instruction. In each of the schools chosen, the principal was asked to nominate confidentially two teachers, one being trained and experienced (ET), the other being untrained and less experienced (LET). However, in one of the schools chosen, both teachers nominated were ET as there was no LET in that school at that time.

Table 2 shows the background characteristics of the twelve teachers participating in this study. Teachers were identified by numbers from 1 to 12 (shown in the first column), with the first seven being trained and experienced (i.e., ET1 to ET7) and the other five being untrained and less experienced (i.e., LET8 to LET12). With the exception of ET2 and LET12, the difference in years of teaching experience between the ET and the LET is fairly clear. The similarity in teaching experience between ET2 and LET12 has not jeopardized the validity of this study because ET2 was doing a revision lesson during classroom observation, and her data were not compared with that of the other teachers.

Table 1
Types and Numbers of Schools Chosen in the Sample

	Anglo-Chinese	Chinese Middle
Public	2	1
Private	2	1

Table 2
Qualifications of Teachers in the Sample

Teacher I.D.	Background	Types of Serving School	Sex	Qualification "a + b + c"
ET1	trained & experienced	public	F	4 + 2 + 17
ET2			F	3 + 2 + 2
ET3			M	4 + 2 + 10
ET4			F	3 + 2 + 7
ET5		private	M	2 + 1 + 9
ET6			F	1 + 1 + 7
ET7			M	1 + 1 + 10
LET8	untrained & inexperienced	public	M	3 + 0 + 0
LET9			F	3 + 0 + 0
LET10		private	F	3 + 0 + 0
LET11			M	2 + 0 + 0
LET12			M	2 + 0 + 2

Note. ET = experienced and trained teacher
LET = less experienced and untrained teacher

In the "a + b + c" column:

"a" is for academic background, with

- 1 = attaining G.C.E. "A-level"
- 2 = non-recognized college degree
- 3 = university degree
- 4 = higher degree

"b" is for teaching qualifications, with

- 1 = teaching qualification for non-graduates
- 2 = teaching qualification for graduates

"c" is for the years of teaching experience

The characteristics of the schools and students served by the teachers in this study are summarized in Table 3. Teachers 1 and 8 served in the same school number 1, teachers 2 and 4 served in the same school number 2, and so on. All the schools, except for school number 2, are co-educational. The majority of the classes observed were from Form 2 to Form 4, and various subject areas were taught. The overall abilities of the students, as reflected in the quality of student intake and public examination results, ranged from average to below average. Instructional medium for the Anglo-Chinese schools (except for the Chinese related subjects)

should be in English, but in actual practice in the classrooms observed in this study, teachers used very little English in oral communication even in the senior forms.

A request was made to all the teachers in this study to permit the researcher to observe their teaching and to make a video recording of their lessons. Immediately after the lesson was completed, the method of stimulated recall interviews was used to help the teachers to recall some of the thoughts and actions in their lessons. Instructional routines of the teachers were identified during classroom observation and later confirmed in the video playbacks.

Table 3
Some Characteristics of the Teachers and the Teaching Environments

Characteristics	Teacher Identity											
	E1	E2	E3	E4	E5	E6	E7	L8	L9	L10	L11	L12
School identity	1	2	3	2	4	5	6	1	3	5	6	4
Funding of school	P	P	P	P	R	R	R	P	P	R	R	R
Sex of teacher	F	F	M	F	M	F	F	M	F	F	M	M
Sex of school	O	F	O	F	O	O	O	O	O	O	O	O
Secondary Form level	4	2	5	4	4	1	3	4	4	1	2	3
Overall student academic level	B	B	B	B	C	C	C	B	B	C	C	C
Medium of instruction of school	H	A	A	A	H	A	A	H	A	A	A	H
Subject content	c	c	n	g	p	m	e	h	a	z	e	h
% of English in oral communication	1	1	2	2	1	2	6	1	2	2	5	1
% of English in written work	1	1	7	7	1	7	7	1	7	7	7	1

Note.

E = ET = experienced and trained teacher
 L = LET = less experienced and untrained teacher
 P = public R = private
 M = male F = female teacher or single sex female school
 O = coeducational
 B = average C = below average
 A = Anglo-Chinese H = Chinese Middle

Subject content include:

c = Chinese g = Geography m = Mathematics
 n = Economics p = Physics e = English
 h = History a = Accounts z = Econ. & Public Affairs

Percentage of English in oral communication or written work:

1 = All Cantonese or Chinese
 2 = Less than 20 % in English
 3 = 40 to 40 % in English
 4 = 40 to 60 % in English
 5 = 60 to 80 % in English
 6 = Over 80 % in English
 7 = All in English

In this study, the DIP was used to help identify the teaching acts. The routines, representative of a particular teaching style, were transcribed for illustrative purposes. I used the TPOS to rate the quality of the teaching acts, routines, and the overall classroom order achieved by the teachers participating in this study. In order to get a more balanced viewpoint, I also invited one to two university colleagues and some of my Master of Education (MEd) students who have the relevant expertise to comment on the quality of the teaching in some of the video-lessons. Their comments are helpful in understanding the

teaching of the specific subject areas. There is usually consensus in our assessments of the quality of the teaching characteristics and the overall classroom order reflected in the video lessons. Since only qualitative comments were obtained, there was no attempt to estimate the inter-rater reliability of the TPOS.

The following is an example of the instructional routine of ET1 together with the transcript illustration. This teacher is an experienced female teacher who teaches Chinese to a class of Form 4 students in a Chinese-Middle school. Her typical teaching routine consisted of 6 steps:

Steps	Acts
1.	T (teacher) told S (student) about procedures to follow.
2.	T told S the lines to read aloud.
3.	T nominated a S who then stood up and read from text.
4.	T instructed S to stop reading.
5.	T underlined for S unimportant and important words and lines.
6.	T read and explained text (2-9 mins). T occasionally wrote some words on chalkboard. T sometimes asked a few ceremonial questions (meaning that they were used for gaining attention, and the teacher supplied the answers).
7.	T repeating routine (steps 2 to 6) for another part of the text. In fact, the teacher repeated this routine four times in the lesson observed.

In the above example, steps 1 to 5 contain single acts. Step 6 contains multiple acts that do not follow a fixed sequence. The following is an example of an illustrative transcript:

"Let's come to the second part," the teacher continued, "XXX1 (student's name), would you please read?" (XXX1 stood up and read aloud. The rest of class looked at their own text. Teacher remained standing in the front of the classroom.)

"OK, stop reading," the teacher told the student. "Cross out these two lines from the beginning of the paragraph. Keep the rest of lines. I am going to read and explain now." (The teacher read and explained the words and terms in the text. Occasionally the teacher wrote down one or two words, in a haphazard pattern, on the chalkboard.) The teacher continued, "A person should not be too materialistic, otherwise he would not be easily satisfied. Take for instance, he would want to buy a bicycle first, then he would need to have a car." ... (The teacher kept on explaining for about 8 minutes, without asking one question in that period of time.)

When the teacher finished explaining, she continued, "Now, XXX2, you continue to read." (XXX2 stood up and read.) "OK, stop," the teacher commanded, "let's cross out the line beginning from here." (The teacher re-started the same routine again to cover another section of the text. In fact, the teacher followed this routine four times in the lesson observed.)

Since the routine contains discrete teaching steps, it can be flow-charted. As an example, the flow-chart of the routine of ET1 is shown in Figure 2.

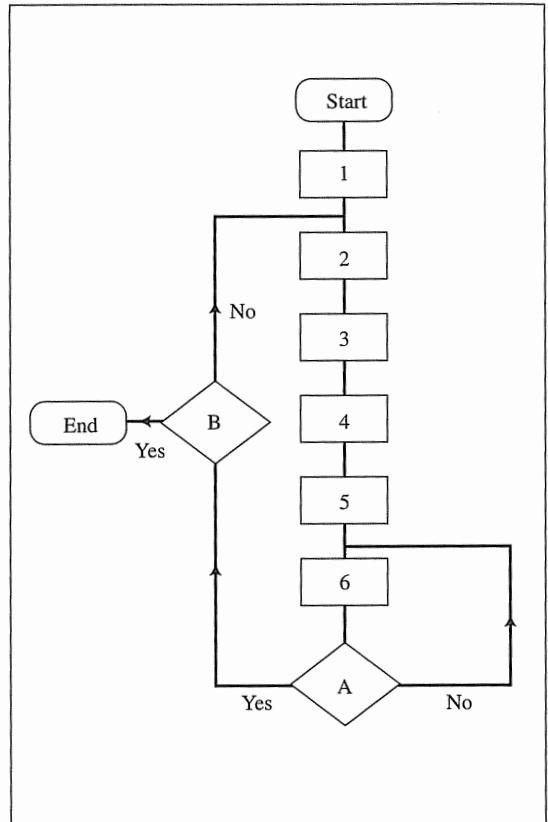


Figure 2. Flow-chart of the Instructional Routine for Teacher 1.

Note. Numbers refer to the sequence of the teaching steps:

Steps	Acts
1.	T (teacher) told S (student) about procedures to follow.
2.	T told S the lines to read aloud.
3.	T nominated a S who then stood up and read from text.
4.	T instructed S to stop reading.
5.	T underlined for S unimportant and important words and lines.
6.	T read and explained text (2-9 mins). T occasionally wrote some words on chalkboard. T sometimes asked a few ceremonial questions (meaning that they were used for gaining attention, and the teacher supplied the answers).
7.	T repeating routine (steps 2 to 6) for another part of the text. In fact, the teacher repeated this routine four times in the lesson observed.

A = Are planned materials within a routine completed? If no, the teacher will remain within step 6. If yes, the teacher will continue to teach another section of the text and start in step 2 again.

B = Are planned materials in a lesson completed? If no, the teacher will move back to step 2. If yes, the teacher will end this part of the lesson and move on to do other activities.

Similarly, the flow-charts of the routines of the other teachers can also be drawn and compared. Based on the information from the routines and transcripts of all the teachers, the following results are obtained.

Results and Discussion

As conjectured at the beginning of this paper, most of the teaching activities observed in the classrooms in this study were executed as instructional routines. This is not a surprising phenomenon, in fact, our daily activities, including the time to wake up, going to work, and so on, have usually a sequence to follow. Unless teaching is conducted in a regular pattern, it would be difficult for students to follow the instruction.

The results of this study also indicated that an instructional routine can be decomposed into a series of steps and acts as described by the "teaching acts model." In this model, the smallest element in the routine is the teaching act that is defined by a verb with or without an accompanying object. Some routines contain only one act, such as talking to the students all the time. By examining the routines and the acts, the teaching process of different teachers can be studied and compared.

Similarities Between the ET and the LET

In the literature, the contrast between the ET and the LET has been frequently reported. However, relatively little has been said about their similarities. Some common characteristics in teaching between the ET and the LET were noted in this study. One similarity, quite surprisingly, is the general shape or pattern of their routines!

The Content-dictated instructional routines. Perhaps due to the emphasis on examinations in Hong Kong, both the ET and the LET know that it is important to complete the syllabus content before the start of the examinations, particularly the public ones. Therefore, lots of decisions in the instructional routine (see location "A" and "B" in Figure 2) are related to content progress. Although each teacher may handle a lesson in a unique style, nevertheless, the overall shape of the flow-charts of their routines is quite similar (Figure 3).

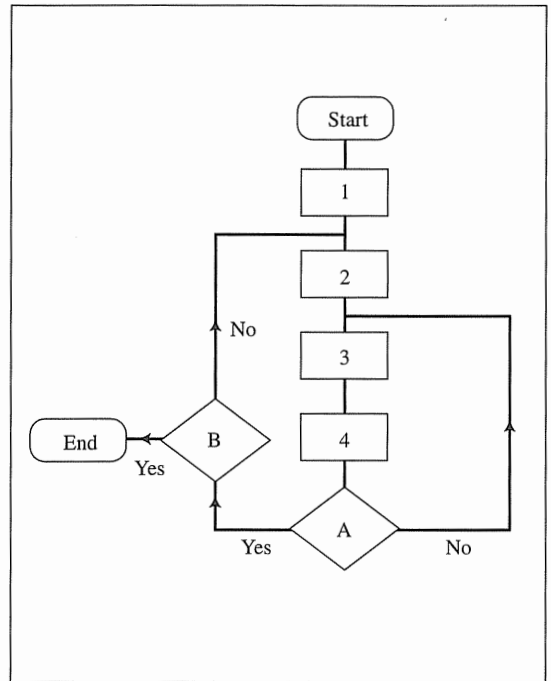


Figure 3. *Flowchart of a Typical Instructional Routine.*

Note. Numbers refer to the sequence of the teaching steps.
 A = Are planned materials within a routine completed?
 B = Are planned materials in a lesson completed?

In this general pattern of sequence, the decision to continue with the existing instructional routine or not depends on content progress. If a teacher completed a segment of the pre-planned materials, the teacher would move on to a new routine or re-start the same routine. Otherwise, the teacher would stay within the same routine. Therefore, the routines are content-activated or content-dictated. It is true that content-progress also depends on students' behaviours which can reflect their mastery of the subject matter, nevertheless, it seems that the force to continue teaching is more of a concern of the amount of content coverage than the degree of students' understanding. These routines are not commonly activated by students' behaviours as hypothesized by Peterson and Clark (1978) and Shavelson and Stern (1981). Data in this study seemed to suggest the hypothesis that teachers in the same local setting would make similar decisions at the main decision points of their instructional routine. This reflects the effects of strong common influence across schools in the local setting.

Extensive use of the exposition approach. In this study, exposition is defined as presenting 100% of the information to the students. If a teacher presents less than 100% of the content, and guides the students to fill in these "missing gaps", the approach would be called discovery. The size of the gap to be filled in depends very much on the ability of the students. Data collected in this study indicated that the majority of both the ET and the LET used the exposition approach to instruction. This includes questioning which is targeted at the recall and understanding of knowledge rather than at the application of knowledge.

Apart from the lesson of ET2 doing a revision, the teaching objectives of the teachers in this study fell into two categories. One is the teaching of declarative knowledge (e.g., ET1) with emphasis on the recall and understanding of the meaning of terms, propositions, concepts, rules, and text materials. The other is the teaching of procedural knowledge (e.g., ET5) with emphasis on the application of rules and problem solving. In both categories of instructional tasks, exposition is the main approach used by the ET and the LET.

An example of extensive use of exposition is shown by ET4 who is a female teacher teaching Form 4 geography in an Anglo-Chinese girls' school. The topic was shifting agriculture. Materials in the text and words written on the chalkboard were all in English, but the teacher mainly spoke in Cantonese (see Table 3). She introduced each sub-topic with a key ceremonial question defined previously as a question aimed at gaining attention, but the answer was supplied by the teacher. The following is an example of her teaching:

The teacher continued in Cantonese, "The backward tribes will usually practice agriculture in the upland regions." "Why upland?" She asked. After a short pause, she answered, "These tribes are backward, they farm in the upland which is usually sparsely populated and so there will be fewer people to compete with them. They are not well educated and their farming is backward as well."

The teacher raised another question, "How is shifting agriculture executed?" Then she said, "Well, some of the villagers have to select a piece of land in the forest. The size of it will depend on the size of the family. ... Now, the land is occupied by tropical forest, so how can they farm? They cannot unless they burn a piece of land. ..." (The teacher then wrote on the chalkboard "select a plot of forest land" and "cut down trees and burn them to clear space" in English and then continued with her exposition in Cantonese again.)

Language problems. To teach in the medium of English to students who are poor in English is a challenging task. This is a common problem that both the ET and the LET are facing since the majority of the secondary schools in Hong Kong are Anglo-Chinese schools which are supposed to use English as the oral and written medium for instruction. To cope with this language problem, both the ET and the LET used two common strategies. One (as shown in Table 3) is to change the oral medium to Cantonese (the written medium remains English). The other is to teach the vocabulary before teaching the subject content.

ET6 is an experienced female teacher teaching Form 1 mathematics in a private Anglo-Chinese school with students relatively poor in academic abilities. She copied onto the chalkboard a problem in English: "A farmer collected 1600 pineapples in the farm, 7.5 % of them became rotten. How many pineapples would he be able to sell?"

"Let us look at this question. Originally, how many pineapples are there?" The teacher spoke in Cantonese to enable students to understand the question better. Students made a chorus response in Cantonese by saying, "1600." The teacher then challenged in Cantonese again, "What is being asked in the question?" Some students shouted out in Cantonese, "The number left undamaged." The teacher asked in Cantonese again, "Which English word in this question is for damaged?" Students this time shouted out in English, "Rotten." (The teacher continued to use Cantonese in teaching.)

In the same school, a less experienced teacher, LET10, was teaching economics and public affairs in a Form 1 class. Like the others, she similarly spoke in Cantonese and used English as the written medium. The lesson topic was "The people of Hong Kong."

(The students in class looked around, murmuring amongst themselves freely. Occasionally the teacher had to remind students to pay attention. The teacher wrote several new English words on the chalkboard, including, "district, arrive, province, cosmopolitan, Tanga, Philippines.")

After pausing for a while to wait for the students to finish copying, the teacher said in Cantonese, "Follow me to read these words once."

"District," she pronounced in English. Students then followed loudly together, "District." The teacher then said, "Arrive," and students similarly followed loudly, "Arrive." (This same drilling procedure was used to teach all the other new words on the chalkboard.)

The teacher then instructed in Cantonese, "Now you read." She then pointed out each word on the chalkboard and all students read out loudly together. (At the same time, the teacher corrected any wrong pronunciations by the students. Unfortunately, the teacher mispronounced the word "cosmopolitan" herself!)

After this vocabulary training part, the teacher then moved on to teach the scheduled subject content mainly in Cantonese.

It can be seen from the above episodes that this language barrier did slow down the pace of learning. The use of English as a medium of instruction in the junior forms may not help to improve the students' language ability, particularly if the teachers themselves are not proficient in that language.

Use of textbook and chalkboard. Perhaps due to the similarity of school provisions and classroom space, both the ET and the LET used similar teaching aids which were mainly the textbooks and the chalkboard. In most of the classes observed, both the ET and the LET frequently stood in the front part of the classroom, orally imparting knowledge to their students. Sometimes they explained the content of the textbook, at other times they wrote down materials on the chalkboard. An example of exposition of textbook content was previously given by ET1, and illustrations of chalkboard usage were given by ET4, ET6, and LET10. As shown later, examples of textbook exposition and blackboard usage are plentiful in this study.

In discussing the use of teaching aids, I am not criticising teachers for their dependence on the text and the chalkboard, which are indispensable particularly in the Hong Kong setting. Like using any other tool, the final results depend much on the methods of using them. Therefore, effective use of the textbook and the chalkboard is a useful and relevant topic for teachers in the classroom.

Differences Between the ET and the LET

Although there are some similarities between the ET and the LET in the general instructional pattern and approach, nevertheless, the ET have much better management skills, thus, producing better teaching effects. These differences are discussed in the following.

Teaching steps. Compared with the LET, all the ET presented the subject matter in smaller parts. They made more pauses while teaching, and asked more questions to check for understanding. The instructional routines of the ET contain more teaching steps, e.g., ET1 used more teaching steps than LET8, and ET5 employed more steps than LET12. Each pair of these teachers was teaching in the same school.

The instructional routine of LET12 basically contained one single large teaching step which was continuous exposition. He is a young male teacher teaching Form 3 Chinese history in a Chinese middle school. The instruction was in Cantonese.

"At that time, the central government had little actual control over the provinces. Each province was in fact controlled by an army general. ..." He kept on talking and telling stories to the students for nearly the whole lesson.

For most of the time, he was talking in the middle front part of the classroom. He seemed to know the history well, including names and dates. Occasionally, he would look at the book or the notes on the desk in front of him. Once in a while, he would write a few words on the chalkboard, or asked a few ceremonial questions. However, he did not scan the students while talking, nor did he seem to be aware of what students were doing in their seats. He just kept on talking and presenting information.

I interviewed him after his lesson and asked him why he kept on speaking to the students for such a long time. "The materials in the book are boring, therefore I need to tell them more stories and information," he responded. It seems that he may have a good reason to use more exposition, nevertheless, I think that more questions should be asked in order to check for understanding of the materials by the students before proceeding.

Delivery of questions. Another difference between the ET and the LET is the method of delivering questions. In terms of quantity, the majority of ET asked more questions than the LET. In terms of procedures, the majority of the ET raised a question first, then nominated a student to stand up (usually in the junior forms) to give the answer. The teacher then signalled the student to sit down. On the contrary, chorus responding and the shouting of answers directly from the seats were more obvious in the lessons of the LET. Both ET7 and LET11 were teaching English in the same Anglo-Chinese school, but the difference in their approach to deliver questions is obvious.

ET7 is a female teacher teaching Form 3 English comprehension on "Looking after the old." The teacher wrote down all materials in English on the chalkboard, but she sometimes explained in Cantonese. As observed, students behaved well in her class.

Students were instructed to do silent reading. Meanwhile, the teacher walked around in the classroom, checking on the students. After approximately three minutes, the teacher spoke in English in a firm voice, "Now, have you finished reading?" (The students began to turn their attention to the teacher.) The teacher looked at the students and asked, "Well, in western nations, do old people live with their children and families? In western countries, do old people live with their children? Do they?" The teacher paused for a while and gave a hand signal to a student XXX1, saying at the same time, "You tell me."

Student XXX1 stood up, but did not seem to know the answer. He thought for a while, then read verbatim from the book in a low voice, "Old people live alone."

"Sit down please," the teacher said. "In western countries old people usually live alone. That means, do they live with their family? XXX2."

XXX2 stood up but said nothing. The teacher repeated the question, "Old people live alone, that means, do they live with their sons and daughters? Yes or No?"

XXX2 responded, "Yes." The teacher was surprised to hear this response. "Yes! That means living with their children? Sit down." The teacher replied. She seemed to be a bit annoyed. She then looked at another student, and said, "XXX3, you tell me."

XXX3 stood up and said, "No." The teacher was pleased to hear this answer. "Yes, thank you," she said, and with a hand signal, instructed the student to sit down.

It can be seen from the above episode that the standard of English of the students was very low, but they generally behaved well in her class. On the contrary, LET11, a male teacher, was getting quite different results. His lesson was on the use of comparative adjectives. Compared with that of ET7, he used slightly more Cantonese in explanations (see Table 3).

(The teacher wrote down the lengths of the Nile, Amazon, and the Yangtze on the chalkboard. Students were whispering in their seats.) The teacher was a bit annoyed by the noise of the students, but he continued to teach in English, "Now we want to compare the Nile and the Amazon. Which is longer?" One student shouted out in the seat, "Nile."

"Yes, Nile," the teacher said. He then wrote on the chalkboard (saying simultaneously the same words), "Nile is longer than ____?" (Here the teacher paused for a short moment, seemed to be expecting for an answer.)

At this moment, one student shouted out in his seat, "Amazon." "Yes, the Amazon," the teacher said, and simultaneously wrote down the same words on the chalkboard. (Some students continued to murmur in their seats, but the teacher ignored them and did not stop their talking.)

"How about if we want to use the word short?" The teacher asked, "The Amazon is ____?" (Here the teacher paused again.) This time, several students answered together, "Shorter."

"Shorter than the Nile," the teacher confirmed, speaking and writing down simultaneously the same words on the chalkboard. (At this moment the sound of an aeroplane flying just above the school building became very loud. However, the teacher and students seemed to be used to this noise level, and he kept on teaching.)

As seen from the above episode, proper techniques in delivering questions are important in holding the attention of the students. Apart from the method in delivering questions, the cognitive level of the questions is also important. Unfortunately, with the exception of ET5 (discussed later in the Section on the "Use of guided discovery") who used some discovery questions, the majority of the ET and the LET used a lot of recall questions.

Approaches to classroom management.

Theoretically speaking, there are three general approaches to classroom management, namely, teacher centered, student centered, and teacher-student agreement strategies (Wolfgang & Glickman, 1986). In the present study, the ET tended to use the teacher centered strategies. On the whole, they were more assertive and would not permit students to shout out the answers or talk freely in their seats. On the other hand, the LET tended to be more "lenient," seeming to take a more laissez-faire style. They often continued teaching even when students were talking or doing something else in their seats. As indicated in the previous section, ET7 seemed to be assertive, but LET11 tended to take a laissez-faire approach. As a result, the classroom order of ET7 was much better than that of LET11.

The same phenomenon was observed in the lessons of ET3 and LET9, both were teaching in the same Anglo-Chinese school. They both talked mainly in Cantonese, used the chalkboard frequently, and asked many ceremonial questions. However, there was a remarkable difference in their management styles.

ET3 is a male teacher. He was teaching Form 5 economics on the "Balance of trade and payments." He spoke in a firm and clear voice, sometimes glancing at the students while talking. He was assertive and firm, and occasionally he would call a student by name to answer his questions.

"We have earlier in this lesson talked about the balance of trade. You know what are visibles?" The teacher asked in Cantonese. He paused for a short moment, and then gave out the answer in a slow but firm voice, "Goods."

"What are invisibles?" The teacher asked again. "Services," the teacher answered, writing down the same word on the chalkboard simultaneously.

"What kind of services will cause our country to receive money or to pay out money?" The teacher asked while looking at the students. He then pointed at one student and said, "XXX1, you know?" The student then stood up and said, "Tourist." "Yes, OK," the teacher responded and signalled him to sit down.

Compared with that of ET3, the classroom order of LET9 was chaotic. She was teaching a Form 4 class Principles of Accounts. The topic was "Bad debts." She was permissive and did not stop students from talking or doing other things in their seats.

The teacher stood frequently in the front part of the classroom, holding a textbook in one hand. She continued, "Bad debt means the money that cannot be collected back, that is, the debtor is not returning money to the lender." (When the teacher was saying these words, she mainly concentrated on the textbook without scanning around to detect what students were doing. Some of them seemed to be inattentive, and were talking with their neighbours, but the teacher just kept on teaching.)

Use of guided discovery. The term "discovery," as defined earlier, is presenting less than 100% of the information to the students but asking them to fill in the missing gaps of knowledge. The majority of the ET and the LET in this study used the exposition approach. However, there were exceptions. Two teachers, ET5 and LET10, occasionally used some techniques of guided discovery, although most of the time, their teaching was exposition in nature. This "mixing" of discovery and exposition made their teaching more interesting than that of the other teachers. In terms of classroom order, ET5 did much better than LET10.

ET5 is a male teacher teaching Form 4 physics in a Chinese Middle school with students of below average academic ability. However, he sometimes challenged his students by presenting

them with some information and then asked them to make inference. Actually, the following is not a good example of discovery questioning because the teacher supplied the main conclusion. Nevertheless, it is relatively better than many of the other questions noted in this study.

The teacher had just finished explaining two gas laws in physics. He summarized by saying, "The Boyle's Law says that when the temperature remains constant, pressure is inversely proportional to volume. The Charles' Law states that when pressure remains constant, volume is directly proportional to the absolute temperature." While the teacher was saying this, he pointed with his finger at the formulae previously written on the chalkboard:

$$\frac{P_1}{P_2} = \frac{V_2}{V_1} \quad \frac{V_1}{V_2} = \frac{T_1}{T_2}$$

The teacher asked, "Based on these two principles, can you conclude that pressure is inversely proportional to temperature?" Meanwhile the teacher wrote on the chalkboard:

$$\frac{P_1}{P_2} = \frac{T_2}{T_1} ?$$

Some students murmured, "Yes, Yes." The teacher repeated the question, "Can this formula be established?" Some students said, "Yes." But others said, "No."

"XXX1, you tell me." The teacher said. XXX1 stood up and answered, "No." The teacher challenged him by asking, "Why not?" XXX1 was unable to answer. The teacher cued, "What is to remain constant in the Charles Law?" XXX1 answered, "Pressure." The teacher continued, "What is to remain constant in Boyle's Law?" XXX1 said, "Temperature."

The teacher asked, "When the two equations are established under different conditions, can they be combined?" Students said, "No." The teacher concluded by saying, "When the conditions of the two formulae are different, we cannot combine them just like this."

Some elements of discovery were also found in the lesson of LET10. But because of her permissive style and the use of chorus responding, the class was quite noisy. Reference to the teaching of LET10 was made earlier in the section on "Language problems" where she was teaching Form 1 economics and public affairs in an Anglo-Chinese school. After teaching students the English vocabulary in the textbook, she then switched to use Cantonese to teach the subject matter content on "The people of Hong Kong."

"Look at the table in your textbook. Is the younger population, i.e., less than 15 years of age, increasing or decreasing?" The teacher asked in Cantonese.

"Deincreasing." Students answered in Cantonese. (This is the sound produced by a combination of various answers of "increasing" and "decreasing"!)

"What"? The teacher asked, "Those saying increasing raise your hands." (The teacher looked at the hands raised.) After a while, she said, "Those saying decreasing raise your hands." (The teacher looked at the hands again.)

"The answer is decreasing," the teacher said. "But why?" She continued. One student shouted out in his seat, "Family planning." (The rest of class instantly laughed loudly.)

The teacher ignored this laughter and pointed at one student asking, "Why?" The student thought for a while but made no response. The teacher answered, "They do not raise as many children as our ancestors." (Some students continued to enjoy the joke and laughed, others talked with their classmates.)

Orderly and chaotic chorus responding. As previously described, both LET10 and LET11 permitted chorus responding, resulting in a lot of noise and murmuring in class. Some of the ET in this study also permitted group response, however, more order was observed in their classes. As an example, the use of chorus responding was frequently practiced by ET4 whose lesson was previously given in the section on "Extensive use of the exposition approach." The following transcript segment is a continuation of her teaching on shifting agriculture.

"Do you remember, when the fertility in the soil is decreasing, what term can we use?" The teacher asked in Cantonese to the whole class.

"Soil erosion." (About half of the students made an overt response, the rest kept silence.)

The teacher corrected the mistake by saying, "No, erosion is when the soil is washed away. Here the case is that the soil cannot support healthy growth of plants."

The class responded again, "Soil exhaustion." (This time, about 20% of students in class made this overt response.) "Yes, soil exhaustion." The teacher confirmed.

In this lesson by ET4, chorus response proceeded in an orderly manner. However, personally I do not prefer using this method of group response because less attention is required of the students. In addition, it is difficult to check their understanding.

Summary and Recommendations

Teachers observed in this study generally have two main task objectives. One is the exposition of declarative knowledge (defined previously in the section on "Extensive use of the exposition approach" as the recall and understanding of text materials). There are seven teachers in this category, namely, LET12, LET8, LET10, ET4, ET1, ET3, and ET7. The other is the exposition of procedural knowledge (also previously defined as the application of rules and solution of problems) with four teachers in this group, namely, LET11, LET9, ET6, and ET5. The order of teachers in each category was arranged in increasing level of effectiveness (in terms of classroom order) as judged by this author during classroom visits and in consultation with colleagues and some MEd students by looking at the video-playbacks. The above sequence indicated that the ET are relatively and consistently better than the LET in both task objectives. As ET2 was doing a revision lesson during classroom visit, her data were not compared with those of the other teachers.

In terms of exposition of declarative knowledge, ET7 showed the best performance. A transcript of her teaching was given previously under the section on "Delivery of questions." One of her strengths is using questions to maintain order in the classroom. In teaching procedural knowledge, ET5 is the best. As previously discussed under the section on the "Use of guided discovery," he occasionally used the discovery method in his questions. However, like the other teachers, his teaching is also basically exposition in nature (i.e., telling students 100% of the information).

In the classes visited, it was found that there were three types of teaching activities, namely, teacher exposition, teacher-student interaction, and classroom management. Although there were similarities in their approaches to teaching, such as the use of the exposition method, the ET had better teaching skills than the LET in all these three areas.

Some of the characteristics of teaching processes observed in this study are summarized in Table 4 which is based on information derived from quantitative data abstracted from the TPOS.

Table 4
Summary of Some Teaching Characteristics

Teaching characteristics	E1	E2	E3	E4	E5	E6	E7	L8	L9	L10	L11	L12
<i>Teacher exposition:</i>												
Stating objectives clearly	1	2	3	4	5	6	7	8	9	10	11	12
Gives clear information	1	2	3	4	5		7	8		10		12
Ensures all students hear T's message	1	2	3	4	5	6	7	8				
Shows encouragement and appreciation					5	6						
Breaks content into small parts	1	2	3	4	5	6	7		9	10	11	
Teaches in continuous large blocks								8				12
Routine controlled by content progress	1	2	3	4	5	6	7	8	9	10	11	12
Listing essential propositions	1	2	3	4	5		7			10		
Writing key words on chalkboard	1	2	3	4	5	6	7	8	9	10	11	
Writing extensively on chalkboard			3	4	5	6			9	10	11	
Content depending heavily on S text	1	2	3	4	5	6	7	8	9	10	11	12
Use effective tables/diagrams					5							
<i>Teacher-student (T-S) interaction:</i>												
Asking many questions (q)		2	3	4	5	6	7			10	11	
Asking only a few questions	1							8				12
Encourage students to ask questions						6						
Asking recall questions	1	2	3	4	5	6	7		9	10	11	
Asking analysis questions			3		5	6		8		10		
Asking discovery questions					5							
Ceremonial q, not expecting Ss' response			3	4				8	9	10	11	12
Teacher calls individual student to answer	1	2	3		5	6	7		9	10		
Chorus response in good order				4		6						
Students just freely respond in seat										10	11	
<i>Teacher management:</i>												
T looking mainly at text/notes	1	2		4	5	6	7		9	10	11	
T concentrating on content	1	2	3	4	5	6	7	8	9	10	11	12
Talking and scanning simultaneously at Ss			3		5	6	7					
Stays mostly in the front of class	1	2		4	5			8	9	10	11	12
Moving to different areas			3			6	7					
Talks in a firm voice			3		5		7					
Takes effective preventive measures			3				7					
Puts students under control quickly			3				7					
Not able to put S under control										10	11	
<i>Quality of classroom order:</i>												
Good classroom order observed			3		5		7					
Average classroom order observed	1	2		4		6		8				12
Poor classroom order observed									9	10	11	

Note. E = ET = experienced & trained teachers

L = LET = less experienced & untrained teachers

In generating data for Table 4, if a teaching characteristic, such as "stating objectives clearly," is rated at 3 or above on the 4-point scale of the TPOS, the corresponding teacher number will be entered. As an example, with reference to the same item on "stating objectives clearly," the numbers of all the teachers are recorded. This means that all the ET and the LET can perform this skill well. In the following, the ET and the LET are briefly compared under the three areas of teacher exposition, teacher-student interaction, and classroom management.

Teacher Exposition

Oral exposition, coupled with the use of textbooks and a chalkboard, is the commonest form of teaching for both the ET and the LET. However, the LET are relatively weak in ensuring that their messages are understood by the students in class. It seems that they have equated teacher delivery of the messages with students' reception and understanding of the content. They have ignored the existence of noise. Some of the LET kept on talking even when some of the students were doing other things or whispering to their friends. Some of the LET also failed to break the subject matter down into smaller pieces for easier digestion, and the majority failed to point out and to enumerate the essential propositions for better understanding. In other words, as one would have expected, they did not seem to have the skills for good exposition.

For both groups of teachers concerned, there was an inadequate use of encouragement techniques, and this was particularly obvious in the lessons of the LET. Words and gestures to show encouragement and appreciation of students' efforts were hardly noticed. Also, the decision to continue with an existing instructional routine or not depended often on subject matter progress.

Teacher-Student Interaction

In this paper, interaction includes questioning, responding, and discussion. In terms of interaction techniques, the ET asked many more questions than the LET. The ET tended to nominate students by name to answer the questions, whereas the LET tended to address the questions to the whole class, permitting chorus

responding that was frequently mis-used by students by shouting out answers or saying other things for fun. Although some ET also permitted chorus responding, it was usually conducted in a more orderly manner. Some teachers asked ceremonial questions, meaning that the teachers themselves provided the answers without really expecting students to give the response. On the whole, more LET used ceremonial questions during teaching.

Perhaps due to the relatively poor academic standard of the students, a lot of the lower order questions, such as the recall and comprehension types, were asked by both the ET and the LET. Analysis and application types of questions were rare. Also, both groups of teachers seldom encouraged students to ask questions in class.

Classroom Management

This is the area that best discriminated between the two groups of teachers. The LET usually failed to scan the students simultaneously when talking. They were not assertive and firm enough when dealing with students. As a result, students took advantage of them. On the whole, the LET failed to establish an important rule, and that is, only one person at one time can do the talking (except in the time for group discussion), and students must first obtain permission to speak when the teacher is talking. The presence of noise and minor disturbances were commonly observed in the classrooms of the LET. When confronted by noise or disobedience, the LET did not seem to know how to handle. They frequently ignored the noise and kept on teaching.

By means of better monitoring and question-delivery techniques, order was generally achieved in the classes of the ET. An interesting incident occurred in the class of ET1 whose Chinese lesson was described previously under the section on "Data Collection." Students first appeared quiet and attentive when the teacher was teaching in an assertive manner. Then somehow the teacher made a joke in order to, in the words of the teacher, "break the monotony." But, as indicated in the following episode, the resulting classroom order failed to remain at its previous level.

The teacher continued teaching by saying, "We should feel optimistic, and not be bound too much by our materialistic wants. Some people have fame and wealth. Others have fame but no wealth, and some have wealth but no fame. You haven't any of these, at least in these several years."

She then added, "But I don't know what would happen to you in the future. Some of you, like XXX3 (student's name) who always sings in class (class started laughing), may later become a singer, like the famous singer YYY (name of a popular singer in Hong Kong)."

(The class continued to laugh and make jokes with each other. The teacher stared at them to remind them to be quiet. However, the class order from that time onwards failed to remain at its previous attention level.)

It seems to this author that teachers (particularly the LET), unless they can re-gain the control of classroom order quickly, should avoid making unnecessary jokes with their students in class. They should explore other ways to motivate the students.

Although it is an old cliché to say that teaching is an art, nevertheless, as indicated in this study, training and experience did produce relatively more effective teaching behaviours. Although the general pattern of the instructional flow-charts of both groups of teachers are quite similar, nevertheless, the ET handled the lessons more skillfully than the LET. The result was that there was better classroom order achieved in the classes of the former. On the whole, the LET seemed to fail particularly in classroom management, such as preventing students from talking freely and shouting out answers in their seats. School heads, senior teachers, and educators should consider ways to help new teachers to overcome these problems in classroom teaching. Inappropriate teaching behaviours should be identified early and corrected before they become fixated in the minds of teachers.

As oral exposition, in association with the textbook and chalkboard, is the most common method employed by all the ET and LET, ways to make this approach more effective and interesting, such as the inclusion of discovery elements, better presentation techniques, and so on, should be explored and introduced particularly to the beginning teachers.

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