Quantification of Teacher Research

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From Teaching to Research

In teacher education, teaching and research have been taken as two separate and unrelated aspects of training. Teaching is the job of classroom teachers and research that of experts from outside the classroom. If teachers were involved at all in research, they almost invariably play a minor role by assisting in data collection or carrying out the experiment. Thus, the problem being studied comes from without the classroom and hence has little relevance to the teacher's daily work. It is therefore not surprising if teachers feel research has nothing to do with them.

From a positive point of view, scholars and experts should concentrate on producing knowledge through research and supply teachers with it; this is division of labour. Unfortunately, division of labour does not always mean cooperation. As a result, researchers and teachers go their own ways without much meaningful conferencing.

Can teachers of language (or any other school subjects for that matter) benefit from research? Yes, if they do it personally and make research an integral part of their teaching through "learning by doing".

In the midst of a very busy schedule, teachers may not realize a fact: that *every lesson is an experiment in a very real sense.* There are three reasons for this assertion. First, the effect of any lesson is *probabilistic* rather than *deterministic* in that the results of teaching is relative and not absolute. A lesson is going to be *more* or *less* successful but not *totally* successful or otherwise. Secondly, after a lesson, teachers are more concerned with how to get on with the next and seldom, if at all, have the time or habit to reflect on the lesson just taught. Thirdly, most teacher education programmes aim almost exclusively at developing teaching skills and not at developing the skills that will enable teachers to develop teaching skills. The recent movement of classroom-based research, action research, or teacher research is to rectify this deficiency in teacher education.

As a matter of fact, it is not difficult for teachers to 'promote' themselves as teacher-researchers. Thinking and concerned teachers will, as a habit, reflect on their own teaching and try to improve on it. However, not being trained in research, teachers may not be in the habit of systematically and objectively recording and evaluating their own teaching behaviours and effects. Many of the 'conclusions' are coloured by personal impression, faith and preference. This situation is clearly evidenced in many articles written by teachers for teachers.

Think, Try, and Check

To quantify teacher research in language teaching, the best starting point is the teacher's experience. The teacher can follow a cycle of three steps:
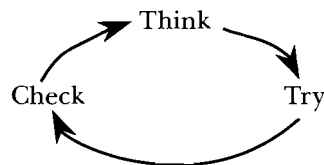
The teacher can begin with reflecting on the habitual ways of teaching certain aspects of the language lesson, think of alternative ways which may be more effective or efficient. These alternatives need to be tried out in the classroom to see if they work. To check their effectiveness, it is necessary to do some kind of systematic and objective record-keeping.

In most teaching situations, pupil calibre and curriculum materials are the 'given', and to which the teacher can make almost no changes. None theless, there are other aspects of classroom teaching where the teacher is in a good position to change: how the materials are organised and presented, how the pupils are organised and involved; how teaching aids are used; and how pupils are assessed, etc. These can be called 'situational factors' which are under the full control of the teacher and can be expected to influence pupil learning. Four examples from the more recent research literature are cited below for illustration.

In a normal reading class, it is a common practice that the teacher asks questions based on the text the pupils have read. In an experimental study, pupils asked questions instead. These pupils scored higher on a comprehension test when compared with those who answered the teacher's questions in the usual manner (Davey & McBride, 1987). In an undergraduate class, students who were explicitly told to underline key concepts scored higher on a recall test when compared with those not told to do so (Blanchard & Mikkelson, 1987). A class of primary pupils were given partial lists of spelling words over four days, from Mondays to Thursdays, while another class was given the complete lists on Mondays; both were tested on Fridays. The class given the partial lists did better on testing (Guza & McLaughlin, 1987). One class of primary pupils were instructed to imagine they were projecting words on to an imaginary screen after seeing the words. Another class listened to the teacher reading the letters in of each word and yet another class 'wrote the words in the air'. On the post test, the imagery group scored the highest (Sears & Johnson, 1986).

In these examples, the independent variables were all 'situational factors' or alternative ways of presenting or processing the language materials to be learned; by using the alternatives, a pupil's performance was enhanced.

In the local scene, a group of fifteen experienced Chinese Language teachers attending the Advanced Certificate in Education programme were guided to carry out similar classroom-based research projects. They were first given a short course on how to plan such projects and how to analyze the data using simple statistics (eg the Mann-Whitney and the Wilcoxon tests). They then carried out the studies with their own pupils. They found that

* distributed practice was more effective,
* home study before the lesson was beneficial,
* memorisation did not help comprehension,
* dictation helped recall of Chinese words,
* competition of word-forming and word-combining improved recall of Chinese words,
* filling blanks with helping words and sentence completion were more effective than rote-learning of Chinese words,
* group and individual learning made no difference in the identification of errors in the writing of Chinese,
* practising on word-combining and orally making sentences had the same effect,
* emphasising passage meanings and emphasising the learning of word meanings had the same effect on the comprehension test, and,
* teacher-centred and pupil-centred approaches made no difference in comprehension.

Benefits to Teachers

Classroom-based teacher research is not without its problems. First of all, such research tends to be void of theoretical underpinning as it is a pragmatic approach to the study of teaching effectiveness and hence will not help the teacher in better understanding the language she teaches. Next, the research is 'localised' and hence the findings are specific to the particular classroom where the study was carried out; generalizing beyond this is doubtful. None the less, there are some advantages that may accrue.

First, since the problem arises from daily teaching and the findings feed back to the classroom, it serves as a form of quality control of classroom teaching. The problem is real, and the purpose is to improve teaching.

Secondly, it deals with the psychological and social aspects of classroom learning and hence, affects directly factors related to the pupils learning process.

Thirdly, this form of research focuses on the teaching behaviours the teacher has been used to and enables her to evaluate these with impar-

tiality, thus helping the teacher to sort out her thinking and preferences where teaching methods are concerned.

Fourthly, to carry out such research, the teacher needs to prepare herself by acquiring some skills and knowledge beyond those pertaining to the subject matter and instruction; this is therefore a form of professional development which will widen the teacher's view, enhance her confidence and improve her image as a professional.

Finally, although individual teachers' classroom-based research is limited as to its generalisation, the accumulation of such studies will ultimately enable the formulation of principles of language teaching with wider applicability.

What Next?

Many of the problems faced by language teachers have to do with classroom organisation, pupil activities and presentation of learning materials. To a large extent, such problems have been neglected, leading to a dichotomy of research and teaching. For research to serve the teacher well and be useful to them, it is desirable that teachers be prepared,both psychologically and technically, to see themselves as teacher-researchers, to carry out their own research in their own classrooms and use the findings for their own and for their students' benefit. Some actions worthy of serious consideration for classroom-based research and of value to the teachers are:

* preservice teacher education should include a course in classroom-based research,
* inservice training in classroom-based research should be available to interested teachers,
* teacher education institutions should set up units to plan, design, promote and coordinate classroom-based research,
* professional publications should provide more opportunity for write-ups on classroom-based research by teachers,
* teacher organisations should initiate and sponsor seminars and conferences on classroom-based teacher research, and,
* teachers should see quantitative classroom-based research as part and parcel of their daily work.

[*Editorial Note:* This paper is based on the one presented by the author as one of the three plenary papers at the World Conference on the Chinese Language and Its Teaching in the World held in Singapore on 27-29 December 1990. The Conference organized by the Chinese Linguistic Society, Singapore, was opened by Singapore's Prime Minister Mr Lee Kuan Yew, and was attended by scholars from China, USA, USSR, Malaysia, Singapore among other nations.]

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