ATTITUDES TOWARDS ACTION RESEARCH: THE CASE OF CURRICULUM LEADERS IN HONG KONG

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Following the decision of the Education and Manpower Bureau to create a position of Primary School Master/Mistress (Curriculum Development) (PSM(CD)) in Hong Kong primary schools, it becomes significant to understand the beliefs which these curriculum leaders hold with respect to action research – as a means to help schools to reflect upon their strengths and to decide how best to bring about reform in curriculum. A survey of 209 PSM(CD)s suggested that in general they favoured using research in their work. A four-factor model indicated that the majority of the respondents perceived themselves as having the ability to do research, valued research for professional development and providing solutions to teaching and learning deficiencies, and found the action research course useful. The survey results showed that demonstrated research experience and holding higher degree qualification had no significant impact on attitudes to action research, but that those attitudes were associated positively with the participants’ sense of self-efficacy, an internal locus of control and their commitment to their school. The work will contribute to gaining an understanding of how curriculum leaders’ participation in school-based curriculum research and development can be facilitated.

Curriculum reform is one of the major educational reforms introduced by the Hong Kong SAR government in recent years. It is a policy measure adopted by the Education and Manpower Bureau (EMB) to help school heads and teachers to reflect upon the strengths of their schools, and to decide how best to reform the curriculum in the context
of the school to achieve their educational aims. This policy is based on the main recommendations made by the Curriculum Development Council in its consultation document *Learning to learn, the way forward in curriculum development* (Curriculum Development Council, 2000). The policy puts strong emphasis on achieving the overall aim of the school curriculum, which is to provide all students with essential life-learning experiences for whole-person development. To realize this ideal, the Chief Executive of the Hong Kong SAR in his 2001 policy address announced a raft of initiatives to enhance the quality of teachers and teaching. One of these initiatives was the creation of an additional teaching post for a Curriculum Officer in primary schools “to lead internal curriculum development” (Chief Executive, 2001). These teachers were given the title of Primary School Master/Mistress (Curriculum Development), hereafter referred to as PSM(CD). The posts were promotion positions with a limited duration of 5 years, carrying a significant range of responsibilities for advancing curriculum reform in Hong Kong schools.

These PSM(CD)s are curriculum leaders. They are expected to take up the challenges in their schools, in their classrooms and perhaps most importantly, in their hearts (Peterson & Deal, 2002). Their responsibilities were set out in detail in an EMB circular (Education and Manpower Bureau, 2003, p. 2) as follows:

The PSM(CD) will serve as a curriculum leader to help the school in reforming the curriculum in accordance with the educational aims to promote whole-person development and life-long learning. The duties of the curriculum leader in more specific terms are:

(i) To assist the school head to lead and coordinate whole-school curriculum planning so that each school can strike a balance between the central curriculum, the mission of the schools and learning needs of students according to the recommendations of the curriculum reform;

(ii) To support the school head in planning and coordinating assessment policy and assessment practices;
(iii) To lead teachers/specialist staff in improving learning and teaching strategies and assessment practices through staff development days, collaborative lesson preparation, selection and development of appropriate learning and teaching resources, etc.;

(iv) To promote a professional exchange culture within the school and to establish links with other schools for sharing of experiences in learning, teaching and curriculum development; and

(v) To take up a reasonable teaching load (which should be less than 50% of the average teaching load of a teacher of the school) so that the curriculum leader can keep close contact with the real situation of daily classroom learning and teaching.

The efforts of the curriculum leaders should be to improve the quality of a school curriculum, which is measured in terms of its coherence and flexibility to set directions for teaching and learning, and its ability to adapt to changes and the different needs of the students and the schools.

Compared to the ways in which the school curriculum was organized and implemented in the past, the new curriculum reform policy is a significant breakthrough, giving individual schools the power and freedom to develop and put into practice their own curriculum, and to realize their goals for quality school education. The value of such a policy is undeniable, but its success depends greatly on how the PSM(CD)s perceive their role in school-based curriculum research and development. Their attitude towards research is the key attribute for attaining a good quality school curriculum. Their underlying drive to reflect upon their limitations in teaching, and their competence in bringing about improvement through action research, will shape to a significant extent how well the reform works.

The purpose of this study is to develop valid ways to measure and investigate the attitudes which PSM(CD)s have towards action research, the factors involved, and the variables that are associated with
them. These variables include their previous demonstrated research experience, the highest academic qualification they hold, and several psychological constructs, specifically self-efficacy, an internal locus of control and commitment to the school. The study will contribute to teacher education by providing an understanding of the teachers' thinking with respect to action research. The work sheds light on ways of achieving success in curriculum reform. This paper would be useful to government and professional bodies for conceptualising and putting into practice the necessary components that would facilitate the participation of teachers in school-based curriculum research and development.

**Action Research and Curriculum Development**

A great deal of literature exists that documents the role of action research in educational practice and curriculum development (Elliott, 1998; Hustler, Cassidy, & Cuff, 1986; Somekh, 2005). The underlying thought is that front-line teachers are not only capable but are also in the right position to do research in their workplace. It should not be considered that teachers are only “users” of the specialized knowledge of academics or experts who claim to know better the educational setting. This is because, for action researchers, educational practice should emphasize the “process-as-a-whole”. The practice of teaching is about “knowing-in-action”, which is modified by a “reflection-in-action”, and the ability to reflect on a situation (Carr & Kemmis, 1986; Kemmis, 1988). Practical experience and skilled judgement are more important than the specialized knowledge of academics or experts. Much knowledge is tacit; therefore research into classroom practice can have a potentially pervasive impact on educational practice. A teacher-researcher model (Stenhouse, 1975) encourages teachers to play the role of researchers and to examine their own practice critically and systematically. Action research is about curriculum development, puts provisional practice and new ideas to test, and treats its participants as a kind of social matter, a form of strategic action susceptible to improvement. Each classroom is therefore a “laboratory” which allows teachers to test and verify their ideas. In this way, by realizing their potential, teachers would no longer be kept in ignorance, but rather freed and emancipated. Action research
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is a promising tool for teachers to use to investigate educational issues and to take steps to improve or change the situation (Altrichter, Posch, & Somekh, 1993). It is a process that enhances professional development and is inseparable from the teacher’s practical work in an authentic classroom situation (McKernan, 1996). Recent studies in Hong Kong have also identified the value of action research in classroom practices and curriculum development, and the belief of adopting an action research approach for effective teaching and learning (Kember et al., 1997 & 2001; Caldwell, Lee, & Webb, 2003). The qualities necessary for a successful action researcher are sensitivity and self-reflection, and most importantly having a favourable attitude towards research. However, research conceptions vary with the nature of research experience and negative attitudes might also be unavoidable (see, for example, Brew, 2001; Murtonen, 2005). In the light of this, it is necessary to explore the attitudes of curriculum leaders towards action research, and the factors involved.

Shumsky’s (1958) research attempted to explore teachers’ attitudes in three areas: (i) their feelings of confidence in doing or reading research; (ii) the significance of research to teachers; and (iii) their feelings towards the research course. It was found that the majority of the 25 teachers in the sample expressed confidence in their ability to produce and consume research. On the one hand they considered that research would be practical for teachers, but on the other hand they felt inadequate and apprehensive about having to actually do it. Since research was such an emotionally loaded topic, those who taught it should present it not only as a method of intelligence but also as a way to explore the feelings of the participants about the research experience and how relevant it was to the participants’ job. Studies have been undertaken on this aspect, for example Isakson & Ellsworth (1978 & 1979), that seek to establish reliable and valid ways of measuring research attitudes, so as to improve educational research courses.

Other studies have sought to identify those variables that best predicted the attitudes towards research. However, they have not yet yielded a consistent set of findings. For example, Short & Szabo’s (1972)
early study of 204 secondary school teachers in western New York State indicated that, although there were variables which appeared to be related to the teachers’ knowledge of educational research terminology, their research attitudes might be independent of the knowledge components of educational research. In fact, a recent survey conducted by Walker & Cousins (1994) of 280 teachers and principals in east-central Ontario (Canada) suggested that a significant proportion of the variance in the attitudes of the teachers towards local applied research — purpose of local research, attitudes towards participation in research, utility of research and support for research activity — could be explained by certain personal and organizational characteristics. These included a prior participation in research, a sense of personal efficacy as a teacher, and a propensity to learn. In the light of such conflicting results, therefore, this study also investigates the variables that are associated with teachers’ attitudes to research.

Psychological Constructs: Self-Efficacy, an Internal Locus of Control and Commitment to the School

Prominent among the psychological constructs which can help to deepen the understanding of teachers’ thinking with respect to research are self-efficacy, an internal locus of control and commitment to the school. The psychological construct of self-efficacy is a belief in one’s capacity to organize and execute the courses of action required to manage prospective situations (Bandura, 1977), while the social cognitive theory (Bandura, 1986) asserts that individuals possess a self-system that enables them to exercise a measure of control over their thoughts, feelings, motivations, and actions. This self-system serves as a reference mechanism for perceiving, regulating and evaluating behaviours, which results from the interplay between the system and the environmental sources of influence. It also serves as a self-regulatory function by providing individuals with the capability to influence their own cognitive processes and actions and thus alter their environments. As such, the way that individuals interpret the results of their own performance attainments informs and alters their environments and their beliefs, and this in turn informs and alters their subsequent performances. Self-efficacy is an essential measure for understanding how curriculum leaders’
perceived capabilities are related to designated types of performance. This is a key construct for explaining the strengths and weaknesses of curriculum leaders within schools.

The concept “locus of control” in the social learning theory (Rotter, 1954 & 1966; Levenson, 1981) is crucial for understanding how people learn, and reveals more details of the nature of the human learning process in different learning situations. Locus of control refers to the internal state of mind of an individual concerning how he or she perceives reinforcements and how references are developed for directing behaviours. Reinforcement plays an important role in human learning because, for a human subject, the effect of reinforcement on subsequent behaviour depends upon the degree to which the person perceives a causal relationship between his or her own behaviour and the reinforcement. An internal locus of control refers to a situation in which the person perceives that the event is contingent upon his or her own behaviour or his efforts or his own relatively permanent characteristics. It is an important variable that explains variations in human behavioural choice.

With respect to “commitment to the school”, research on organizational behaviour shows that commitment is an important aspect in explaining the performance of different organizations (Kiesler, 1971; Ghemawat, 1991). Organizational commitment is defined as the relative strength of an individual’s identification with and involvement in a particular organization (Mentor, 1995). It is characterized by at least three factors: (i) a strong belief in and acceptance of the organization’s goals and values; (ii) a willingness to exert considerable effort on behalf of the organization; and (iii) a strong desire to maintain membership in the organization. Commitment to the school is thus a key psychological construct explaining the dynamics that curriculum leaders have within schools.

Methods

The survey research method was used for this study (Cohen & Manion, 1989; Fink, 1995; Munn & Drever, 1999). It was selected for three reasons. First, it allowed access to a comparatively large sample of cases within a short period of time. Second, the collection of
information was generally anonymous and a high return rate was possible. Third, the use of standardized questionnaires made comparison of information possible.

Four different sets of questionnaires were used to measure and investigate the attitudes of curriculum leaders towards action research and the psychological constructs of self-efficacy, an internal locus of control and commitment to the school. These questionnaires were found to be reliable and internally consistent. The first set of questionnaire was the 17-item scale of attitudes towards research (Shumsky, 1958). The items were translated and back translated, from English to Chinese and from Chinese to English, until the Chinese wording achieved the closest match to the original English meaning. However, to make sure that the scale was comprehensive, additional items exploring the implications of research for curriculum development were included. This trial version of the instrument, hereafter referred to as ATR, was piloted with 30 in-service teachers. These in-service teachers were part-time B.Ed. second year students of the Hong Kong Institute of Education. The pilot was undertaken at the time that they were taking the module “Education Project”, which was designed to provide them with the research tools that they would use in a piece of research which was of interest to them as teachers. The items were examined, and any items which were not consistent with the scale, did not seem valid and which had the least discriminating power were either removed or modified. There were three criteria: (i) items whose means were close to the extremes of the scale; (ii) items whose corrected item-total correlations were less than 0.30; and (iii) items whose removal increase the alpha values. Following this pilot, 5 out of the 17 items Shumsky’s scale were removed, and together with another 3 additional items, a 15-item ATR was developed.

The second set of questionnaire was the 10-item self-efficacy scale that measures self-efficacy (Schwarzer, 1992). Four items were selected from the scale. They were: “I can always manage to solve difficult problems if I try hard enough”, “It is easy for me to stick to my aims and accomplish my goals”, “I am confident that I could deal efficiently with unexpected events”, and “No matter what comes my
way, I'm usually able to handle it". The third set of questionnaires were the 23-item internal-external locus of control scale (Rotter, 1966) and the 24-item internality, powerful others and chance scale (Levenson, 1981). Four items were selected from the two scales. They were: “When I make plans, I am almost certain to make them work”, “When I get what I want, it’s usually because I worked hard for it”, “My life is determined by my own actions”, and “I can pretty much determine what will happen to me”. The fourth set of questionnaire was the 15-item organizational commitment scale (Mentor, 1995). Four items were selected and modified to fit the school context. They were: “I feel very much loyalty to this school”, “I am willing to put in a great deal of effort beyond that normally expected in order to help this school be successful”, “I am proud to tell others that I am part of this school”, and “I really care about the fate of this school”.

The respondents were asked to indicate, using a 5-point Likert scale, how much they agreed with each of the 15 items of the ATR and the 12 items of the three psychological constructs. The possible responses ranged from “strongly disagree” through “disagree”, “no comment”, “agree” to “strongly agree”, with numerical values of 1 to 5 assigned for purposes of later analysis.

These questionnaires were administered to 228 newly appointed curriculum leaders enrolled in the PSM(CD) training programme, organized by the Department of Curriculum and Instruction, Hong Kong Institute of Education. The training programme consisted of two courses, C1 and C2. C1 aimed to promote a deep understanding of the most up-to-date learning theories, and issues relating to curriculum design and implementation. Group discussions were the major teaching and learning activities, and participants were assessed on the extent to which they could put those theories into practice and come up with a curriculum plan. C2 required participants to carry out a small-scale school-based action research which could be related to anything they wanted to improve in their job. The teaching method was tutorials, during which they were assessed on the extent to which they could formulate a research plan, collect relevant research data, and draw the appropriate conclusions and apply the results.
Action research content was included only in C2 and, therefore, the questionnaires were distributed at the beginning of C2. 209 questionnaires were returned which represented a response rate of 91.7%.

The quantitative data were entered into the software Statistical Package for Social Sciences (SPSS) for analysis and different techniques were employed (Bryman & Cramer, 1997; Norušis, 2000). Exploratory factor analysis was used to identify the underlying dimensions of the ATR. This was important given that it was necessary to identify the pattern of thoughts embedded in the minds of Chinese teachers, and thus to develop appropriate measures of validity and reliability for the scale (Gorsuch, 1983; Beauducel, 1997). To show the distributions and variations of the ATR and its sub-scales, mean and standard deviations were reported. Independent sample t-tests were used to test the within group effects in the target variables with the two demographic variables: demonstrated research experience and highest academic qualification held. Pearson product-moment correlations were used to test the degree of association between the target variables and the psychological constructs of self-efficacy, an internal locus of control and commitment to the school.

Results and Discussion

Validity and Reliability of ATR

To identify the underlying dimensions of ATR, exploratory factor analysis (EFA) was used with principal components analysis as the method for factor extraction, followed by oblique rotation. The initial factor matrix extracted three factors, and the items of each factor were compared and contrasted. However, this pattern did not reveal any meaningful explanation, even taking into account the three areas of research attitudes which Shumsky’s scale tried to measure, so further alternatives were explored. When the 15 items were extracted for four factors, the pattern was meaningful. Table 1 shows the rotated factor loading for the 15 items.
### Table 1
Rotated factor loadings of the 15-item ATR

<table>
<thead>
<tr>
<th>The 15 items</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research should be carried out by school people in order to improve classroom teaching.</td>
<td>0.914</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I think that participating in research can lead to more change in the participant's school practices than his reading the research of others.</td>
<td>0.816</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teachers should not only learn from the results of research studies but also do research themselves.</td>
<td>0.788</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research activity on the part of the teacher is a growth-inducing enterprise.</td>
<td></td>
<td>0.677</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research activity facilitates school development.</td>
<td></td>
<td></td>
<td>0.594</td>
<td></td>
</tr>
<tr>
<td>I see research possibilities in my work.</td>
<td></td>
<td></td>
<td></td>
<td>0.421</td>
</tr>
<tr>
<td>I am capable of meticulous research work.</td>
<td></td>
<td></td>
<td></td>
<td>0.802</td>
</tr>
<tr>
<td>I feel fairly confident about my ability to do research on job.</td>
<td></td>
<td></td>
<td></td>
<td>0.797</td>
</tr>
<tr>
<td>Research is not highly specialized activity, I can handle it as well.</td>
<td></td>
<td></td>
<td></td>
<td>0.737</td>
</tr>
<tr>
<td>I feel adequate in reading and interpreting general published research.</td>
<td></td>
<td></td>
<td></td>
<td>0.701</td>
</tr>
<tr>
<td>Research is of great help in meeting classroom problems.</td>
<td></td>
<td></td>
<td></td>
<td>0.805</td>
</tr>
<tr>
<td>Results of research studies help to enrich what existing theories claim.</td>
<td></td>
<td></td>
<td></td>
<td>0.702</td>
</tr>
<tr>
<td>Research helps to identify ways to meet school problems.</td>
<td></td>
<td></td>
<td></td>
<td>0.693</td>
</tr>
<tr>
<td>This research course provides an opportunity to work on a problem which has been bothering me.</td>
<td></td>
<td></td>
<td></td>
<td>0.751</td>
</tr>
<tr>
<td>This research course provides with me the method to resolve doubts in teaching.</td>
<td></td>
<td></td>
<td></td>
<td>0.71</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Eigenvalue</th>
<th>6.8</th>
<th>1.8</th>
<th>1.0</th>
<th>0.8</th>
</tr>
</thead>
<tbody>
<tr>
<td>(% of variance explained)</td>
<td>45.5</td>
<td>11.8</td>
<td>6.7</td>
<td>5.7</td>
</tr>
</tbody>
</table>

Note: Only values of 0.42 or above are shown in the table.
The first factor consisted of 6 items which referred to a communal sense of the significance of research as a means for professional development. The second factor consisted of 4 items which referred to teachers' perceived ability to do research. The third factor consisted of 3 items which referred to a pedagogical sense of the significance of research as a means to provide solutions for teaching and learning deficiencies. The fourth factor consisted of 2 items which referred to the feelings of the participants about the research course. These four factors explained 69.6% of the total variance.

Reliability analysis was further run for the four factors of the ATR and all the factors were found to be internally consistent (Cronbach Alphas ranged from 0.753 to 0.894). This is because Cronbach Alphas were short of the 0.8 criterion and the factors are regarded as reliable for most purposes.

Hong Kong Curriculum Leaders' Attitudes towards Action Research

To investigate the attitudes curriculum leaders held towards action research, group mean scores for each of the four ATR factors were computed, and their distributions and variations have been summarized in Table 2.

Table 2
Means (and standard deviations) of the four factors of ATR

<table>
<thead>
<tr>
<th>The four factors</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A communal sense of the significance of research as a means for professional development</td>
<td>4.02 (0.59)</td>
</tr>
<tr>
<td>Teachers' perceived ability for doing research</td>
<td>3.82 (0.63)</td>
</tr>
<tr>
<td>A pedagogical sense of the significance of research as a means of providing solutions for teaching and learning deficiencies</td>
<td>3.78 (0.61)</td>
</tr>
<tr>
<td>Teachers' feelings toward the research course</td>
<td>3.75 (0.60)</td>
</tr>
</tbody>
</table>

Note: When computing the mean, 1 = strongly disagree, 2 = disagree, 3 = no comment, 4 = agree, 5 = strongly agree.
In general, the 209 curriculum leaders in this sample favoured including research in their work. They perceived themselves as having the ability to do research, valued research as a means for professional development and to provide solutions for teaching and learning deficiencies, and found the action research course in which they participated to be useful.

Independent sample t-tests were further run for the group mean scores between curriculum leaders who had some or did not have any demonstrated research experience, and between curriculum leaders who had a Bachelors or a Masters degree. These analyses are reported in Tables 3 and 4 respectively.

### Table 3
**Compared means (and standard deviations) and significance tests of the four factors of ATR between curriculum leaders who (i) had some or (ii) did not have any demonstrated research experience**

<table>
<thead>
<tr>
<th>The four factors</th>
<th>Curriculum leaders who had some demonstrated research experience (N=100)</th>
<th>Curriculum leaders who did not have any demonstrated research experience (N=99)</th>
<th><em>P</em> (by t-test)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A communal sense of the significance of research as a means for professional development</td>
<td>3.99 (0.67)</td>
<td>4.04 (0.53)</td>
<td>0.595</td>
</tr>
<tr>
<td>Teacher's perceived ability for doing research</td>
<td>3.68 (0.58)</td>
<td>3.54 (0.69)</td>
<td>0.125</td>
</tr>
<tr>
<td>A pedagogical sense of the significance of research as a means of providing solutions for teaching and learning deficiencies</td>
<td>3.75 (0.66)</td>
<td>3.79 (0.58)</td>
<td>0.633</td>
</tr>
<tr>
<td>Teachers' feelings toward the research course</td>
<td>3.74 (0.63)</td>
<td>3.74 (0.59)</td>
<td>0.978</td>
</tr>
</tbody>
</table>

*Note: When computing the mean, 1 = strongly disagree, 2 = disagree, 3 = no comment, 4 = agree, 5 = strongly disagree.*
Table 4
Compared means (and standard deviations) and significance tests of the four factors of ATR between curriculum leaders who held (i) a Bachelor degree or (ii) a Master degree

<table>
<thead>
<tr>
<th>The four factors</th>
<th>Curriculum leaders who had some demonstrated research experience (N=163)</th>
<th>Curriculum leaders who did not have any demonstrated research experience (N=46)</th>
<th>P (by t-test)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A communal sense of the significance of research as a means for professional development</td>
<td>4.03 (0.59)</td>
<td>3.98 (0.614)</td>
<td>0.614</td>
</tr>
<tr>
<td>Teacher’s perceived ability for doing research</td>
<td>3.56 (0.63)</td>
<td>3.60 (0.60)</td>
<td>0.026</td>
</tr>
<tr>
<td>A pedagogical sense of the significance of research as a means of providing solutions for teaching and learning deficiencies</td>
<td>3.80 (0.61)</td>
<td>3.71 (0.63)</td>
<td>0.393</td>
</tr>
<tr>
<td>Teachers’ feelings toward the research course</td>
<td>3.77 (0.58)</td>
<td>3.65 (0.68)</td>
<td>0.237</td>
</tr>
</tbody>
</table>

Note: When computing the mean, 1 = strongly disagree, 2 = disagree, 3 = no comment, 4 = agree, 5 = strongly disagree.

The results indicated that demonstrated research experience and holding a higher degree did not seem to make a significant difference to curriculum leaders’ research attitudes. It could not be said, therefore, that previous research experience, or a higher degree, say a Masters degree, would mean that they could claim to be more capable of doing research, value more the significance of research, or find the action research course more useful.

The attitudes were further tested for their degree of association with the three psychological constructs: self-efficacy, an internal locus of control and commitment to the school. These constructs were found to be reliable (Cronbach Alphas ranged from 0.711 to 0.908), and their correlations with the four factors are reported in Table 5.
Table 5
Correlations between the four factors of ATR and the three psychological constructs: self-efficacy, an internal locus of control and commitment to the school

<table>
<thead>
<tr>
<th>The four factors</th>
<th>The three psychological constructs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Self-efficacy</td>
</tr>
<tr>
<td>A communal sense of the significance of research as a means for professional development</td>
<td>0.328**</td>
</tr>
<tr>
<td>Teacher’s perceived ability for doing research</td>
<td>0.416**</td>
</tr>
<tr>
<td>A pedagogical sense of the significance of research as a means of providing solutions for teaching and learning deficiencies</td>
<td>0.402**</td>
</tr>
<tr>
<td>Teachers’ feelings toward the research course</td>
<td>0.297**</td>
</tr>
</tbody>
</table>

** p < 0.01

The three constructs were all associated positively with the research attitudes of the teachers in this sample, and the associations were regarded as moderate (10% < r² < 40%). In other words, the more they believed in their capacity to organize and execute courses of action, the more they perceived themselves to have the ability to do research and to value more the significance of research as a means for professional development and to provide solutions for teaching and learning deficiencies. The more they perceived success to be the result of their own efforts, the more they found the action research course to be useful. Also, the more committed the curriculum leaders were to their school, the more positive was their attitude to research.
Communal and Pedagogical Sense of the Significance of Research to Teachers

The successive factor and reliability analyses carried out on ATR identified a distinctive factor structure that was found to be valid and reliable. This factor structure raises a number of issues about the distinct pattern of thoughts that the Chinese teachers in this sample have towards action research. The extraction of the first and third factors of ATR suggested that a clear distinction could be drawn between the communal and the pedagogical sense of the significance of research. The term "communal" refers to the situation that beliefs are shared among members of a group. This was different from the case of Shumsky's sample that revealed only a general sense of the significance of research. Hong Kong curriculum leaders tended to share the common perception that research would contribute to their professional development in general, but they were also concerned with the practical aspects of how it could help to facilitate student learning and classroom teaching. Most teachers are trained or educated to believe that research contributes to professional development, but Hong Kong teachers are more realistic in having reservations if they felt that research could not help them in the classroom. The latter is the pedagogical sense of the significance of research, and is the determining influence on how teachers accept research on a personal level.

This pedagogical sense of the significance of research is critical to achieving a full understanding of the attitudes of teachers towards action research, since action research emphasizes the impact on practical curriculum development in the school. It puts provisional practice and new ideas to test, and treats its participants as a kind of social matter, a form of strategic action susceptible to improvement (Stenhouse, 1975). It provides teachers with a tool to investigate educational issues and take action to improve or change the situation (Altrichter et al., 1993). This has implications for the design of action research courses for curriculum development. It is important for an action research course to directly address and highlight this sense of significance, to counter the impression that courses focusing only on improving teaching skills are better.
The action research course must link up the real problems that are of concern to teachers with the materials, ideas and criticisms presented. A "learning/knowing through doing" approach which elicits a relevant research performance from the participants will be useful. Course tutors are encouraged to support teachers to "work smart". A small-scale but significant action research project that leads to improvements in student learning and classroom teaching would be valuable by any standard. It is also important for course tutors to reinforce and empower the participants through constructive feedback. Once the short-term and specific objective of helping teachers to overcome teaching and learning deficiencies has been achieved, the long-term and idealistic aim of improving the school curriculum will follow. In short, unless a pedagogical sense of the significance of research as a way of finding solutions for teaching and learning deficiencies has been taken into account, a comprehensive understanding of teachers' attitudes towards action research and successful course implementation will be difficult.

**Knowledge and Psychology Components of Action Research**

The comparisons between the demographic and psychological variables suggested another important lesson. On the one hand, the results indicated that it was not the case for this sample, as is commonly believed, that relevant previous experience results in the teacher having a more favourable attitude towards action research. Hong Kong curriculum leaders did not tend to perceive themselves as being more capable of research, nor did they value more the implications of research for professional development, personal growth and classroom teaching, even if they had gone through the process. This confirmed the findings of Short & Szabo's (1972) early study that research attitudes were independent of the knowledge components of educational research. Prior participation in research related courses or in research evidently did not influence the attitudes of participating teachers. The assumption that involvement in research would entail changes in perceptions was not supported in the present data. Teachers used to doubt whether they were ready and adequate to deal with research, citing the great investment of time it would require, their
feelings of insecurity, and the insufficient support available to them, as the main reasons for this.

On the other hand, however, research attitudes were associated positively with the three psychological constructs. Hong Kong curriculum leaders considered that they were more able to do research and valued more the implications of research to them as teachers, when they had a higher sense of self-efficacy and an internal locus of control, and were more committed to the school they belonged to. This again has implications for the design of action research courses for curriculum development, and for what should be accentuated when working professionally with teachers. Compared with the necessary basic knowledge and skills that are cited in most research textbooks, it is equally important to seek to enhance significant psychological components in the participants. These could include, for example, the belief in and perception of their capacity to cope with future uncertainties in curriculum reform and the expectancy of success in curriculum research and development as the result of their own efforts.

Research on the teacher’s sense of efficacy suggests that performance indicators, such as their motivation to engage in and persist in a task, risk taking, and the use of innovations are related to the degrees of efficacy (Ashton, 1985; Tschannen-Moran et al., 1998). Highly effective teachers are more likely to take part in research and be ready to change their attitudes, some of which may have been stereotypes, towards research (Gelso et al., 1996). The relationship is obvious. Developing self-efficacy is an important objective and so it is necessary to rethink the concepts of what should be the significant course intention and content. Self-efficacy is task or content specific and depends on the situation or context in which the action or task is to be performed. It would be helpful, therefore, to construct the course as a learning community that aims to achieve critical research performance. The same pattern of relationship is evident with respect to an internal locus of control, and it is important to prepare the curriculum leaders to believe that the professional world around them is one in which they can exert an influence and make a difference (Kennedy & Hui, 2004).
Conclusion

In summary, on the basis of the evidence up to this stage, there are at least two conditions that are necessary for the effective implementation of action research courses and to facilitate curriculum leaders' participation in school-based curriculum research and development. These are (i) the strengthening of a pedagogical sense of the significance of research as a means to provide solutions for teaching and learning deficiencies and (ii) the development of the curriculum leaders' self-efficacy and an internal locus of control in their role.

First, although by definition action research aims to solve problems that teachers face in their classrooms, a pedagogical sense of the significance of research in any form has to be addressed directly in action research courses. A learning approach that elicits a relevant research performance from the participants is recommended. It is not skills that matter most. It is the consequences of the action research on school development, specifically on providing solutions for teaching and learning deficiencies, that counts. Action research is a practical science (Altrichter et al., 1993). Action research courses need to provide participants the chance to investigate educational issues and take action to improve or change their practice in authentic classroom situation. The argument is clear: “classroom [action] research, well informed by pedagogical and content knowledge, makes a direct contribution to the advancement of pedagogical content knowledge and constitutes an act of scholarship of teaching” (Paulsen, 2001, p. 28).

Second, the development of the curriculum leaders' self-efficacy and an internal locus of control appear to be an important course objective. Success is about stimulating these psychological components throughout the action research course. This process is important in a Chinese context, where the pattern of socialization emphasizes a patriarchal social structure and this can erect barriers to the development of these psychological components (Ho, 1986; Bond, 1991). Values such as being humble, obedient, submissive and non-competitive are stressed in Chinese society. The necessary keys to open these barriers are to suggest ways in which curriculum leaders can
perceive and internalize certain qualities to energize their activity, and to create a positive socio-cultural climate that serves to stimulate and maintain a vigorous research performance. An implication for instruction is to try to reduce the negative research orientation and also to get participants to evaluate, understand, and challenge their own views and conceptions (Murtonen, 2005). It is plausible that a positive self-evaluation, supported by a positive environment, would nurture curriculum leaders’ positive attitudes towards action research and increase their propensity to involve in action research and curriculum development.

Notes
1 An earlier version of this paper was presented by the first author at the AARE 2004 International Education Research Conference, “Doing the Public Good: Positioning Education Research” held by the Australian Association for Research in Education (AARE) in the University of Melbourne, Australia, Nov 28 – Dec 2, 2004.

References


