Is school-based management (SBM) successful in Hong Kong secondary schools?

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This researcher investigated whether School Based Management (SBM) in Hong Kong secondary schools has been successful since its implementation in 1991.

A survey by questionnaire was conducted. The main study questionnaire was mailed to a sample of 110 of the 496 SBM secondary schools in Hong Kong and the data were subjected to exploratory and confirmatory factor analysis. The researcher then utilized Structural Equation Modelling and the computer software AMOS4 to generate the structural equation model.

The Overall Structural Equation Model demonstrates the successful implementation of SBM in Hong Kong secondary schools with respect to Head of Subject Department and teacher empowerment.

INTRODUCTION

It is most striking that in the late twentieth century, business leaders in the world found out the limitations of large, centralized bureaucracies to cope with the rapidly changing market and global competition. In addition, the worldwide recessions of late 1980s and early 1990s emphasized the significant role of education in building sound economies. The weaknesses of centralized educational systems resulted in school restructuring in a wide variety of countries having different social, cultural, economic and political characteristics such as England and Wales, the United States, Australia, Japan and China. School decentralization is highly political as it involves the shift of power (Fiske, 1996).

School-Based Management means decentralization of decision-making from the central government to the local school level and the sharing of decision-making amongst the principal, teachers, parents, community members and students at the school level.
(Oswald, 1995; Levacic, 1998; Raab, 2000). The principal has to share power (Reynolds, 1997) and has to change from an authoritarian to a more collaborative, participative leader (Dimmock, 1998; O'Donoghue & Dimmock, 1998). Teacher empowerment and accountability are major components of SBM. Teachers can influence school decisions by participating in planning, developing, supervising and improving instructional programs (Oswald, 1995). SBM allows principals, teachers, students and parents to have greater responsibility for school decision making about budgets, personnel and the curriculum so that SBM can create more effective learning environments for students (U.S. Department of Education, 1993). Collaborative relationships between administrators and teachers should supersede the hierarchical structure (Reavis & Griffith, 1992).

The global educational reform lies in decentralisation, devolution and restructuring. In Hong Kong, the Education and Manpower Branch and the Education Department of Hong Kong found that Hong Kong schools were not effective. Therefore, the Hong Kong Education Department followed the examples of the other western countries to restructure schools by adopting a new education policy, the School Management Initiative (SMI) in order to provide quality education (Dimmock, 2000). SMI is similar to the global educational restructuring and a pilot scheme was launched in September, 1991 and SMI was called School- Based Management (SBM) in 2000 (Education Commission, 1997). The Education Department of Hong Kong made SBM a compulsory policy and hoped by means of SBM, that all schools, no matter the most or the least able academically, can improve and raise the quality of education in Hong Kong. Cheng (1996) also remarked Hong Kong has shown a strong effort in educational reform.

In Hong Kong, as a result of the new educational reform, all secondary schools changed from non-SBM schools to SBM schools. The school structure was changed from the traditional ‘top-down’ hierarchy to a flatter and a new ‘bottom-up’ school structure. SBM enhances more vertical and horizontal participation in school decision making. It advocates empowerment, greater flexibility with school funding and greater autonomy in running school. The principal, the HOD and the teacher take up new roles. They have more responsibilities, participation, shared decision making, collaboration and increased workload in order to cope with the educational change for school improvement and raising the quality of education.

The HOD is the leader of a team of teachers within the subject department (Blandford, 1997). His / Her traditional roles are to lead curriculum planning (Marland, 1981) and monitor the work of teachers (Stokes, 1981). As SBM advocates a collaborative culture, it has serious consequences for the new role of the HOD who has to take up a new leadership role to start the educational change, lead the change, build a collaborative culture, empower teachers to participate in shared decision-making, build shared vision and goals, help teachers overcome the fear of change, provide teachers with much information about the educational change, lead teachers to accomplish the goals and to fulfill the school and departmental visions and missions. Therefore, the
leadership activities and behaviours of the HOD are of prime importance to the success of the educational reform.

Blandford (1997) pointed out the HOD has new challenges, new responsibilities and requires new leadership activities and behaviours in order to cope with such educational change, this researcher integrates 3 new essential dimensions of leadership activities and behaviours into an innovative leadership model of the HOD for the successful implementation of SBM in Hong Kong secondary schools.

SIGNIFICANCE OF THE STUDY

In 2003/04 academic year, there were 501 secondary schools in Hong Kong (Government Information Centre, 2004) and there were about 45 to 76 teachers to be lead by about 15 to 20 Heads of Subject Departments (HODs) in each secondary school in Hong Kong according to the size of the school, class structure and school curriculum (Government Information Centre, 2004). If the HODs implemented the essential leadership activities and behaviours in each secondary school, 26,419 teachers and 467,223 students (Government Information Centre, 2004) would benefit and the school would add value. In the era of educational reform, the HOD’s new leadership style can contribute to the success of the subject department and SBM in Hong Kong secondary schools.

RESEARCH QUESTION:

How are the leadership activities and behaviours of Heads of Subject Departments in Hong Kong SBM secondary schools perceived by teachers, principals and vice-principals and HODs themselves?

HYPOTHESES STRUCTURAL EQUATION MODEL

The Hypothesized Structural Equation Model (Figure1) illustrates 17 hypothesized relationships among factors (H1-H17). Each path is represented by a directional arrow which suggests a causal direction for the association or corresponds to a hypothesis tested in the study. The Hypothesized Structural Equation Model is based on the traditional ‘top-down’ educational hierarchy in Hong Kong secondary schools. For example:

H1: The model fits the data.
H3: Leadership support of the principal can produce a positive effect upon facilitative enabling of the HOD.
H5: Leadership support of the principal can produce a positive effect upon teacher characteristics.
H12: Facilitative enabling of the HOD can produce a positive effect upon teacher characteristics.
Figure 1: Hypothesised Structural Equation Model with Hypotheses
The interpretation of the Hypothesized Structural Equation Model (Figure 1) is as follows: The principal is at the apex of the school hierarchy. He / She plays a key role in educational reform and has significant influences on the leadership activities and behaviours of the HOD, namely reflective visioning, facilitative enabling and formal structuring activities and behaviours of the HOD. The principal has positive effects upon teacher characteristics, collaborative working of teachers and perceptions of student performance.

Among the 3 new types of HOD’s leadership activities and behaviours, reflective visioning is of prime importance because the HOD shows teachers the vision of the subject department and then motivates them to use creative skills to fulfill it. Therefore, reflective visioning of the HOD can affect the other types of leadership, such as facilitative enabling of the HOD which concerns with communicating instructional matters, such as discussing teaching methods. Facilitative enabling of the HOD can produce a positive effect upon formal structuring of the HOD such as supervising teachers. Facilitative enabling and formal structuring of the HOD can produce direct, positive effects upon teacher characteristics. The 3 new types of HOD’s leadership activities and behaviours and teacher characteristics can produce positive effects upon collaborative working of teachers. Teacher characteristics and collaborative working of teachers can produce positive effects upon perceptions of student performance.

METHODOLOGY

The quantitative research instrument was a 5-point Likert-Type Scale questionnaire of 10 factors consisting of 90 items or questions. The instrument was carefully piloted in 13 government and non-government secondary schools in Hong Kong in mid-June, 2001 with 202 respondents from three levels of staff (principal & vice-principal, Head of Subject Department and teacher) representing 86.3% return rate which was high. The piloting data were subjected to confirmatory factor analysis and Cronbach’s Alpha Reliability Analysis. The reliability coefficients of the 10 factors ranged from 0.7314 to 0.8807 at a cut-off point of 0.7 showing the reliability of the piloting instrument. The sub-scales of the instrument were refined and the number of items was reduced to 67 items and formed the main study questionnaire.

The main study questionnaire was mailed to a sample of 110 of the 496 SBM secondary schools in Hong Kong in November, 2001 to conduct the cross-sectional survey. This gave a sample size of 22% of Hong Kong SBM secondary schools. There were 2,739 respondents from three levels of staff (principal & vice-principal, Head of Subject Department and teacher) representing 83% return rate which was high so the sample is very representative.

The main study data were subjected to confirmatory factor analysis using SPSS/PC+ for Windows and Cronbach’s Alpha Reliability Analysis. As a result, 66 items remained robust in the 10 factors. The sub-scales of the instrument were further refined for the sake of parsimony by exploratory factor analysis and Cronbach’s Alpha Reliability Analysis.
and the number of items was reduced to 64 which loaded onto 7 discrete factors. The researcher then further reduced the 64 items to a 46 item questionnaire so the number of items of each subscale was approximately the same. After confirmatory factor analysis, 46 items of 7 subscales remained with alpha coefficients of between 0.76 and 0.92 at a cut-off point of 0.7 and confirmed the reliability of the instrument.

The seven factors identified were labelled as follows:- Leadership Support of the Principal, Reflective Visioning of the HOD, Facilitative Enabling of the HOD, Formal Structuring of the HOD, Teacher Characteristics, Collaborative Working of Teachers and Perceptions of Student Performance.

The three factors relating to aspects of leadership activities and behaviours of the HOD, namely reflective visioning, facilitative enabling, and formal structuring, all relate to the leadership activities and behaviours of the HOD.

The items that loaded on the factor ‘reflective visioning’ of the HOD mean that the HOD should provide a clear vision for the department, get teachers to share in the development of the vision, excite teachers with vision of what they may accomplish through co-operation, motivate teachers to use creative skills, enable teachers to rethink ideas that they have never questioned before, provide teachers with new ways to look at things and let them think about old problems in new ways.

The items which loaded onto the factor ‘facilitative enabling’ of the HOD mean that the HOD should be friendly, care about teachers, build trust, give assistance to them, communicate clearly regarding instructional matters, discuss teaching methods and allocate resources to meet teaching goals.

The items that loaded onto the factor ‘formal structuring’ of the HOD mean that the HOD should supervise teachers, ask teachers to follow standard rules and regulations, expect teachers’ performance of the highest standard, provide teachers with feedback on their performance, lead formal discussions on student achievement, encourage teachers to have self-evaluation toward achievement of departmental goals and plan teaching activities formally.

The items that loaded on the factor ‘leadership support’ of the principal focus on the awareness by the principal of problems in departments, the degree to which teachers felt encouraged by the principal, the extent to which teachers felt supported by the school administration, the free flow of information between the department and the school administration.

The items that loaded on the factor ‘collaborative working’ of teachers reflect teachers’ collaboration through participation, planning across grades and subjects, sharing of knowledge, co-ordination of curriculum and the shared use of audio visual materials.

The items that loaded on the factor ‘teacher characteristics’ include the following:- enthusiasm, clarity about professional responsibility, strong knowledge of what they teach, getting along well with students, giving praise to students, motivating student to maximum effort and helping their colleagues.
Finally, items that loaded on the factor ‘perceptions of student performance’ relate to student matters such as high achievement, high self-expectation and eagerness to learn. Students have confidence in their study. They put a lot of effort into their work. Their work is finished on time and there are few discipline problems.

Then the researcher adopted Structural Equation Modeling and the computer software AMOS4 (Arbuckle, 2001) to generate the new, integrative, more parsimonious, 7-dimensional structural equation model of the leadership of the HOD in Hong Kong SBM secondary schools.

Kim & Mueller (1978) commented on a parsimonious model as follows:

‘Postulate of Parsimony: this stipulates that, given two or more equally compatible models for the given data, the simpler model is believed to be true; in factor analysis, only the model involving the minimum number of common factors is considered appropriate.’ (p.86)

Garson (2003) suggested parsimony measures as follows:

‘Parsimony measures. These measures penalize for lack of parsimony, since more complex models will, all other things equal, generate better fit than less complex ones.’ (p.18)

Furthermore, Garson (2003, p.4) stated that ‘the closer one is to this most complex model, the better will be one’s fit. That is, adding paths will tend to increase fit. This is why a number of fit measures penalize for lack of parsimony.’

Nevertheless, the Hypothesized Structural Equation Model was rejected because it did not fit the data collected from 2,739 principals, vice-principals, HODs and teachers when it was tested by the seven measures of model fit. The implication is that Hong Kong secondary schools are no longer practising the traditional ‘top-down’ educational hierarchy.

**OVERALL STRUCTURAL EQUATION MODEL OF THE LEADERSHIP OF THE HOD**

The researcher changed the directions of 4 paths of the Hypothesized Structural Equation Model as suggested by the modification indices of the computer software AMOS4 in order to achieve the best fit and most parsimonious model with the fewest paths. This innovative model is called the Overall Structural Equation Model of the Leadership of the HOD as shown in Figure 2.
Figure 2: Overall Structural Equation Model of the Leadership of the HOD

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
<td>Chi-square</td>
<td>8.900</td>
</tr>
<tr>
<td>Degrees of freedom</td>
<td>5</td>
</tr>
<tr>
<td>Probability level</td>
<td>0.113</td>
</tr>
<tr>
<td>GFI</td>
<td>0.999</td>
</tr>
<tr>
<td>AGFI</td>
<td>0.995</td>
</tr>
<tr>
<td>RMSEA</td>
<td>0.017</td>
</tr>
<tr>
<td>PCLOSE</td>
<td>1.000</td>
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</tbody>
</table>
TESTING OF THE OVERALL STRUCTURAL EQUATION MODEL OF THE LEADERSHIP OF THE HOD

Stability Index

This model is a non-recursive one (Kline, 1998) showing five significant feedback loops as shown in Table I below:

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<tr>
<td>D. “leadership support” [leadsupp] → “formal structuring” [formstru] → “teacher characteristics” [teacharc] → “leadership support” [leadsupp]</td>
</tr>
</tbody>
</table>

Arbuckle & Wothke (1999, p.183) stated ‘If the stability index falls between -1 and +1, the system is stable.’ Amos computed the Stability Index of this non-recursive model which is 0.268 so the non-recursive model is acceptable.

Significance Tests of 17 Hypotheses

The researcher proceeded to test the Overall Structural Equation Model which involves a set of 17 hypotheses to test relationships between latent variables and see whether or not it is a good model. All the hypotheses H1-H17 use a significance level of 0.05.

Hypothesis 1: Ho: The data are consistent with the model.
(The model fits the data.)

The researcher assessed the fit of the model by referring to the fit statistics of the text output. In assessing the good fit of the model, there should be a low, non-significant Chi-square value (Kline, 1998; Child, 1990). Chi-square divided by the degrees of freedom results in a low value and this ratio should be less than 3 (Kline, 1998). P value should be over 0.05 (Arbuckle & Wothke, 1999). GFI and AGFI should be over 0.9 (Hoyle & Panter,
1995; Kline, 1998). The RMSEA should be below 0.05 whereas PCLOSE should be over 0.05 showing that RMSEA is less than 0.05 (Arbuckle & Wothke, 1999).

The results of the fit statistics chosen by the researcher to determine the goodness of fit of the Overall Structural Equation Model of the Leadership of the HOD are as follows:

**Seven Measures of Model Fit Are Reported:**

- Chi-square = 8.900
- Degrees of freedom = 5
- Probability level = 0.113
- GFI = 0.999
- AGFI = 0.995
- RMSEA = 0.017
- PCLOSE = 1.000

The results provide evidence of a well-fitting model. The model is a good representation of the sample data.

**Hypotheses 2 to 17**

Arbuckle & Wothke (1999, p.74) stated that ‘Using a significance level of 0.05, any critical ratio that exceeds 1.96 in magnitude would be called significant.’ In reviewing the structural parameter estimates of the Overall Structural Equation Model as shown in Table II, all parameters (paths) are statistically significant (i.e. critical ratio exceeding 1.96) with critical ratios ranging from 6.010 to 30.108

**Table 2: Regression Weights of the Overall Structural Equation Model of the Leadership of the HOD**

<table>
<thead>
<tr>
<th>Regression Weights</th>
<th>Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
<th>Label</th>
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<tbody>
<tr>
<td>H2 percsf</td>
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<td>H3 percsf</td>
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<td>H4 percsf</td>
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<td>H10 collabor</td>
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<td>H11 teacharc</td>
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<tr>
<td>H12 facenab</td>
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<td>H13 leadsupp</td>
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<td>H14 formstru</td>
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<tr>
<td>H15 teacharc</td>
<td></td>
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<tr>
<td>H16 collabor</td>
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<tr>
<td>H17 leadsupp</td>
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<td></td>
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</tbody>
</table>

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All research hypotheses (H1 to H17) were accepted so the Overall Structural Equation Model of the Leadership of the HOD is a parsimonious and robust model.

DISCUSSION OF FINDINGS

All critical ratio parameters in the Overall Structural Equation Model are significant using the standard cut off value of 1.96 so the standardized parameter estimates allow direct comparisons to be made.

Kline (1998) suggested standardized path coefficients with absolute values less than 0.10 indicating a small effect, around 0.30 indicating a medium effect and greater than 0.50 indicating a large effect. However, these guidelines should not be rigidly interpreted.

From the Overall Structural Equation Model, ‘facilitative enabling’ of the HOD shows a large effect on ‘formal structuring’ of the HOD (0.52). The factor ‘leadership support’ of the principal has its strongest association with ‘reflective visioning’ leadership activities and behaviours of the HOD (0.38). Other paths stemming from ‘leadership support’ of the principal are of the order of only one third of the strength of this first path [i.e. ‘leadership support’ → ‘perceptions of student performance’ (0.14); ‘leadership support’ → ‘formal structuring’ (0.15); ‘leadership support’ → ‘collaborative working’ (0.11).] The Overall Structural Equation Model suggests that ‘reflective visioning’ of the leadership activities and behaviours of the HOD has strong associations both with ‘facilitative enabling’ of the HOD (0.39) and with engendering ‘collaborative working’ of teachers (0.33). The model shows a relationship between three leadership activities and behaviours of the HOD, ‘reflective visioning’ → ‘facilitative enabling’ (0.39) and then between ‘facilitative enabling’ → ‘formal structuring’ (0.52). What the model suggests is that there is a sequence to these activities or behaviours, ‘formal structuring’ leadership comes after ‘facilitative enabling’ leadership which itself is preceded by ‘reflective visioning’. At the output end of the model where the anticipated dependent variable would be ‘perceptions of student performance’, the model suggests that three factors impinge upon this outcome. The model indicates that of the three, ‘teacher characteristics’ (0.32) has approximately twice the value of either ‘leadership support’ of the principal (0.14) or ‘collaborative working’ of teachers (0.17) on ‘perceptions of student performance’.

From the Overall Structural Equation Model of the Leadership of the HOD, apart from the causal relationships from [leadsupp] → [reflvis], [leadsupp] → [formstru], that is, from the principal to the HOD, the causal relationship is also from [facenab] → [leadsupp] indicating the influence is from the HOD to the principal. This demonstrates an important piece of evidence of the success of SBM in sense of HOD empowerment.

Moreover, apart from the causal relationships from the principal to the teacher, [leadsupp] → [collabor] and from the HOD to the teacher, that is, [formstru] → [teacharc], the causal relationships are also from the teacher to the HOD, that is, from [teacharc] →
[facenab] and also from the teacher to the principal, that is, from [teacharc] → [leadsupp]. These indicate the success of SBM in sense of teacher empowerment.

Crow (1998) further explained the interdependent, reciprocal system in the school as follows:

‘Teachers and principals may be in an influence relationship where both are leaders and followers at different times. Teachers, for example, lead by influencing other teachers to adopt particular visions of the school or school improvement strategies. They also influence the principal by urging acceptance of new curriculum reforms. Yet teachers are also active followers in an influence relationship with principals.’ (p.137)

So both HODs and teachers can influence the principal and teachers can also influence the HODs. Hollander (1993) remarked,

‘Although leadership and followership have traditionally been seen in highly differentiated terms, they represent interdependent, reciprocal systems.’ (p.30)

From the Overall Structural Equation Model of the Leadership of the HOD, the causal relationship is also from [collabor] → [teacharc] indicating that the collaborative working of teachers has positive impacts on the individual teacher. Collaborative working of teachers is one of the ideal outcomes of SBM whereas the raising of student performance is another. So, the Overall Structural Equation Model demonstrates the ideal outcome of SBM (collaborative working of teachers) impacting on the teachers. It also indicates the successful implementation of SBM in Hong Kong secondary schools and the 3 new dimensions of integrative leadership activities and behaviours of the HOD, namely reflective visioning, facilitative enabling and formal structuring are appropriate for the successful implementation of SBM in Hong Kong secondary schools.

CONCLUSION

As SBM has been implemented in Hong Kong since 1991, both HODs and teachers have been empowered by the principal and the teachers have been empowered by the principals and HODs so the data show that the subordinates can influence the leaders in these 3 aspects: [facenab] → [leadsupp], [teacharc] → [leadsupp] and [teacharc] → [facenab]. Moreover, collaborative working of teachers has positive impacts on the individual teacher [collabor] → [teacharc]. These indicate the success of School Based Management in Hong Kong secondary schools in sense of HOD empowerment and teacher empowerment.
IMPLICATIONS

This research demonstrates that school leadership of the principal and the HOD is complex and involves the reciprocal relationships of the supervisors or leaders (the principal and the HOD) and the subordinate or follower (the teacher) and each can take an active role of influencing one another. So, the principal and the HOD should take greater account of the role of the teachers. This has implications for professional development policy, especially the development for teacher empowerment.

The Overall Structural Equation Model demonstrates that the leadership activities of the HOD are integrative of 3 new essential dimensions, namely reflective visioning, facilitative enabling and formal structuring. These 3 kinds of leadership activities and behaviours of the HOD are more complex than the sole kind of leadership activity and behaviours for the implementation of SBM in Hong Kong. The Education and Manpower Bureau should provide training courses to train the HOD in these 3 dimensions of leadership activities. In addition, the principal should provide ample chances to the HOD to implement these 3 essential dimensions of leadership activities in SBM secondary schools.

The importance of the HOD's new role should be the upward influence on the principal and the downward influence on his/her subordinates (the teachers) in SBM secondary schools.

'Collaborative working' of teachers is a critical factor in SBM schools. For the implementation of SBM reform, the principal and the HOD should enhance collaborative working of teachers, such as participating in goal setting, having opportunities for planning across grades and subjects, sharing knowledge freely, good curriculum coordination and sharing resources.

In summary, Hong Kong has followed the model of global education decentralization. The research findings provide evidences for the success of School Based Management in Hong Kong secondary schools in sense of HOD empowerment and teacher empowerment.

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