教育研究學報 1995，第十卷第一期，36-46

Educational Research Journal 1995, Vol. 10, No. 1, pp. 36-46

Teacher Turnover and Turnover Intentions in Hong Kong Aided Secondary Schools

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This study is divided into two parts. The first part examined the teacher turnover situation in Hong Kong secondary schools from 1989 to 1992. The data, taken from Education Department and HK Subsidized Secondary School Council, showed that while there was a slight reduction of turnover and a large decline in the number of teachers changing schools in the period under study, the wastage rate of teachers remained at the same high level.

The second part involved a study of teachers' turnover intentions. This study adapted the model developed by Mobley (1982) and Willimans (1986) with job attitude acting as a moderator between turnover intention and individual and organizational characteristics. The intention was to understand how individual and possibly organizational factors caused the turnover intention of teachers. A total of 40 schools with over 600 teachers took part in the study. Logistic regressions were used to study the fitness of model. Results showed that teachers with less job satisfaction, who did not choose teaching as their first career choice and who had frequently changed schools had stronger intention to resign. Implications for school administration are discussed.

本研究分為兩部份，第一部份在了解香港中學教師流動的情況，參考資料主要來自教育署的教師轉業報告，小部份來自津貼中學議會數年來所做有關這方面的調查。研究發現，直至 1992 年，教師流失情況仍然嚴重，可幸教師的補充有不少的改善。

第二部份是問卷調查，目的在了解在職教師的離職傾向，研究採用Mobley (1982) 及Williams (1986) 的工作態度模式去探討教師意見和機構的特徵。調查一共訪問了600 多位來自 40 所中學的教師。結果顯示被調查的教師中，發現大部份的教師都缺乏工作滿足感，轉校次數頻密的，以非教學工作為首選的教師，離職傾向較強。研究亦稍探討校方要留意的事項。

Few studies have been carried out in Hong Kong on teacher turnover or turnover intentions. One reason is that before the 1980s the problem of teacher turnover and wastage was not serious. Figures provided by the Education Department (ED) on teacher wastage (Hong Kong Government, 1981) show that in 1978-79, except for the private secondary schools (wastage rate at 29.1%), the wastage rates of teachers in private assisted schools (8.6%), government (3.0%) and aided schools (7.0%) were comparatively not high. However, after the 1970s, the situation changed. The introduction of free and compulsory nine-year education, the expansion of senior secondary school education and the further improvement of teacher student ratio had drastically increased the demand for qualified teachers.

In the later part of the 1980s, school administrators began to experience extreme difficulties in recruiting enough qualified teachers to fill up the vacancies in schools (Hong Kong Subsidized Secondary Schools Council, 1990). Interest was then generated to study the teacher turnover situation. The turnover rate of the time stood at 20% (ED, 1989) and among the reasons which gave rise to teacher turnover, migration and reasons associated with it became prominent (Wong, 1990). Although various opinion surveys and studies suggested many ways to reduce the teacher turnover and wastage, factors influencing their turnover intentions were little reported on.

It is the aim of the present study to study the turnover situation in Hong Kong secondary schools and teachers' turnover intentions.

Defintition of Turnover

Mobley (1982, p.10) defined turnover as the cessation of membership in an organization by an individual who received monetary compensation from the organization. In our study, teacher turnover referred to the act of a teacher leaving his school for various reasons. These include leaving for:

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(a) another school,
(b) other academic or non-academic organizations,
(c) migration,
(d) study both locally or overseas and
(e) retirement or other reasons for ceasing working.

Intra-organizational promotions or transfers are not taken as turnover. Teacher wastage referred to those teachers who leave the teaching profession for good. In the present study, except for reason (a), all the other reasons (b to e) are considered wastage to the schools.

Study on Turnover

Teacher Turnover Study in Hong Kong

In Hong Kong there have been studies on teacher burnout, teacher satisfaction, and occupational stress on teachers and Vice-principals (Tse, 1982; Ip, 1987; Mo, 1991; Cheng, 1993), topics closely related to teacher turnover. It was established that teacher burnout was job-related and that role ambiguity was found to be related to burnout and dissatisfaction (Mo, 1991; Wong, 1992). One study by Wong (1989) showed that between 40% to 50% of the respondents would leave the school or teaching job if a higher pay or high-rank post was offered. In Wong's sample (1989), about 30% indicated that they would actively seek opportunities to quit the profession or the school. Dissatisfaction with the job nature and the school principal and promotion prospects were the main causes for the decision to leave. However, the explanatory powers of the models were quite low (ranging from 5% to 14%).

In 1988, another study on teacher turnover, which was initiated by one of the present authors who was then an active member of Hong Kong Subsidized Secondary Schools Council (HKSSSC), was generated by the concern about insufficient graduate teachers serving the local secondary schools in 1988. Since then the author continued to help HKSSSC to collect data until 1992. Inspired by the example of HKSSSC, the Education Department (ED) engaged in a similar exercise. The government has both the manpower and status to conduct full surveys which cover kindergarten to senior secondary school teachers. These different surveys provide useful information for understanding the pattern of teacher turnover. However, these surveys were merely information gathering, and no theoretical model of any kind was employed or tested.

Staff Turnover Studies Overseas

Staff turnover and their reasons have been a common concern in many overseas studies (McEvoy et al., 1985; Williams et al., 1986; Jenkins, 1993). The early study on turnover concentrated on individual personality and work-related attitude (Mobley et al., 1979; Steers et al., 1978). Recently, interests on turnover were more focused on identifying antecedents and reasons. The intention is to find ways to improve the turnover situation. It was established that personal characteristics, work experience, organizational characteristics did not relate directly to turnover. They had direct influence on job satisfaction and organization commitment which caused turnover (Williams et al., 1986). Mobley et al. (1979) proposed a model which included three major antecedents of intentions, namely, job satisfaction, organizational commitment and perceived alternative employment opportunities.

Bluedorn (1982) argued that when individuals entered an organization they had certain expectations. This set of expectations would interact with the organization the individual experienced to produce satisfaction. In other words, the relationship between initial expectations and satisfaction was moderated by the organization the individual actually experienced. Furthermore, satisfaction was shown to have an influence on commitment, but not on intention to leave.

Williams et al. (1986) reviewed models of organizational commitment using latent variable structural equation methods. His study showed that personal and organizational characteristics influenced job satisfaction directly, and organizational commitment indirectly through their impact on satisfaction and its subsequent effect on commitment. They cautioned any turnover studies which did not include both satisfaction and commitment.

Using meta-analysis on turnover and absenteeism, Blau et al (1987) argued for the inclusion of job involvement as a predictor of absence and turnover other than organizational commitment. Both job involvement and organizational commitment should be important motivators as workers are attracted by both the job and the organization.

Model Proposed for the Present Study

There are more similarities than differences among the conceptual models to explain individual turnover intention reviewed above. All the models were supported by some empirical researches. After careful consideration, the present study adapts largely the model proposed by Mobley (1979), who viewed turnover as the final predicted product of other variables and Williams (1986) who showed

that personal and organizational characteristics influenced job satisfaction directly and commitment indirectly. This model is illustrated as follows:

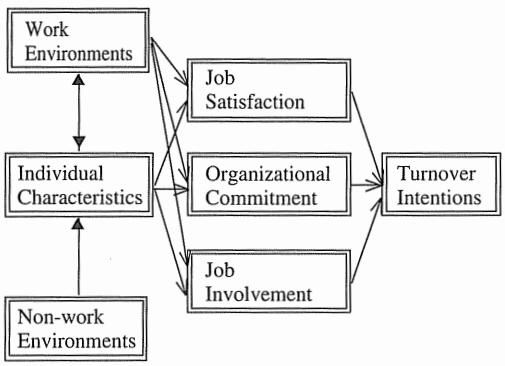

Figure 1. *Proposed Model of Turnover Intentions.*

It is not the intention of this paper to test the validity of this model. Rather, this simplified model is used to help us understand the relations among individual characteristics, job attitudes, work environment and turnover intention — the main purpose of this paper. We do not include the factor of alternative job opportunity of Mobley because we judge (supported by reasons for teachers turnover in Table 2) this factor is not crucial in the Hong Kong setting. In the model, we give more attention to individual characteristics. We do not include organizational characteristics like leadership, climate and culture because the recent studies on leadership and culture call for a qualitative approach in research, which is a totally different orientation from the present paper.

Taxonomy of Turnover

For a long time, studies on turnover focused on the voluntary and involuntary reasons of leavers (Bluedorn, 1978; Price, 1977). However, it is obvious that those who leave an organization for another because of higher salary are quite different from those who leave due to illness. Dalton et al. (1981) introduced a taxonomy which differentiated those who leave for organizationally avoidable reasons from those who leave for unavoidable reasons. This differentiation has greatly improved the study on turnover.

Distinguishing between the avoidable leavers and unavoidable leavers and stayers, Abelson (1987) showed that the unavoidable leavers are similar in many ways to stayers. Abelson (1987) commented that the taxonomy gave a more precise indication of the relation between frequently studied individual level variables and turnover.

The taxonomy Dalton et al. (1981) suggested could be illustrated by Table 1:

Table 1
Taxonomy of Turnover

	Voluntary	Involuntary
Avoidable Turnover	- better pay elsewhere - better working conditions elsewhere - problem with leadership/ administration	- dismissal - layoff
Unavoidable Turnover[1]	- move to another location spouse imposed - mid-career change - stay home to care for spouse/child - pregnancy, did not return after limited period of time - migration	- severe medical problem - death

[1] The treatment of some reasons within this category, such as migration and mid-career change, as unavoidable is arbitrary. For migration, the rationale is simply that it is the political uncertainty prevailing over Hong Kong in the run-up to 1997 that drives many teachers to leave Hong Kong. This is the influence of the 'large atmosphere' over which teachers, as well as many Hong Kong Chinese have no control. This reason is therefore considered as unavoidable.

Source: adapted from Dalton, Krackhardt, and Porter, 1981

This part of the study will concentrate on the phenomena of voluntary avoidable and unavoidable turnovers.

Methodology and Procedures

The aims of the present study are:
- to understand the pattern of teacher turnover in Hong Kong Aided secondary schools and
- to investigate the correlations among individual attributes, work environment variables, their impact on job satisfaction, organizational commitment, job involvement and the turnover intentions of teachers.

Method of Data Collection

In the study, two data sets are used. The first data set is drawn from surveys conducted by ED and

HKSSSC since 1989. These surveys will give an overall picture of teacher turnover from 1989 to 1992.

The second data set was collected on a questionnaire survey on over 600 graduate teachers of aided secondary schools. The questionnaire has four sections.

The first section (A) aimed at collecting teachers' personal attributes, like age, sex, qualification, rank, tenure and present tenure, the expectancy factors like career choice and number of previous schools taught and other non-work environment factors such as number of children. These factors were known to be antecedents of job satisfaction, job involvement and organizational commitment in other studies (Steers & Mowday, 1981; Bluedorn, 1982; Chapman, 1984).

The second section (B) looked for factors of the school environment that might affect the job satisfaction, job involvement and organizational commitment of the teachers. These include history of school, teaching load, quality of students, participation and variety in school activities (Price, 1972: Bluedorn, 1982).

The third section (C) looked for the teachers' affective organizational commitments (items adopted from Mowday et al., 1982), job satisfaction and job involvement (items adopted from Kanungo, 1982; Williams et al., 1986).

Behavioural organizational commitments were measured in the last section (D) which looked for the turnover intentions and the reasons for leaving. Items for measurement of intention to leave were adapted from Smart (1990). The measurement consisted of a single item (D3) reflecting the intentions of teachers to accept a job in either another school or in a non-academic setting.

Responses were coded as follows:
5 = " I have found and accepted one,"
4 = " I am now negotiating for one,"
3 = " I am now actively looking for one,"
2 = " I would seriously consider a reasonable offer,"
1 = " I would not consider an offer."

Methodological Consideration of the Instrument

The questionnaire was used to measure job satisfaction, job involvement and organizational commitment of the teachers at the same time. Conceptually, each of these three has distinctive attitudes.

Job satisfaction is the positive emotional state reflecting an affective response to the job situation while job involvement is defined as a cognitive belief state reflecting the degree of psychological identification with and care about one's job. Although both constructs refer to the specific job, distinctions between the emotional state of liking one's job (job satisfaction) and the cognitive belief state of psychological identification with one's job (job involvement) have been advanced for sometime (Price, 1972, 1977; Mobley, 1979; Williams et al., 1986; Blau et al., 1987).

On the other hand, organizational commitment has been defined as the relative strength of an individual's identification with and involvement in a particular organization, which is characterized by belief in and acceptance of organizational goals and values, willingness to exert effort on behalf of the organization, and a desire to maintain membership in the organization (Mowday et al., 1982; Williams et al., 1986; Kanungo, 1982). Obviously organizational commitment is conceptually distinct in its focus and time frame from the job specific attitudes of job satisfaction and job involvement.

Traditionally, turnover studies relied on the use of ordinary least squares (OLS) regression and discriminant analysis (DA). However, Huselid and Day (1991) questioned this usage. They argued that both OLS and DA were linear techniques that utilized a least squares estimation procedure which provided unbiased parameter estimates only when the dependent variables were continuous and errors were normally distributed. They claimed that when binary dependent measures, such as turnover, were involved, these assumptions were not satisfied. To overcome the problem associated with OLS, Huselid and Day (1991) suggested that non-linear methods, such as logistic regression, be used. Logistic regression could accommodate the binary scale (0,1) of the dependent measure, avoid the assumptions of normality and homoscedasticity and yield accurate estimates of the marginal effects of the independent variables. For these reasons logistic regression is adopted in this study.

In the present study, the intention to leave (D3) was measured by a scale of 1 to 5 indexing the degree of desire of the employee to leave his organization. Analysis of the relationship between intent to leave and its antecedents were conducted using the logistic regression. In the logistic regression analysis, response of the intention to leave was regrouped into intent to leave (response 1 to 4) and no intent to leave (response 5).

Analysis — Teacher Turnover and Wastage

Table 2 shows that there was a steady growth of teaching force from 1989 to 1992, which increased

from 18062 to 19637, representing an average increase of 500 teachers per year. Teacher turnover in all secondary schools rose from 20.5% (3700) in 1989 to 21.8% (4240) in 1990 and dropped to 18.2% (3567) in 1992. The year 1990 was the peak of teacher turnover in the period under study. While the number of teachers changing schools showed a steady decline after 1990, dropping from 9.9% (1919) in 1990 to 6.8% (1326) in 1992, teacher wastage stayed at around 11.5% since 1990, 2.5% higher than the average wastage rate in 1986, 1987 and 1988, (the wastage rates were 9.0%, 8.7% and 9.7% respectively) (ED, 1989).

A breakdown of the reasons for the teacher turnover (Table 2) shows that among the reasons which constitute wastage, the most obvious increase was with 'migration', which rose from 1.58% (285 cases) in 1989 to 2.82% (553 cases) in 1992. The next highest increase was with 'further study', which rose from 1.67% (301 cases) in 1989 to 2.17% (426 cases) in 1992. Other than the decline in changing schools, there was a slight drop of teachers in changing to jobs outside teaching. This may be due indirectly to a slowdown of migration caused by recession in Canada and Australia. In fact, the recession in these two countries has driven many Hong Kong people back, and many have ended up in teaching jobs. Surveys conducted by HKSSSC (89-91, Table 3) confirmed that although the problem of teacher wastage remained the same, the recruitment situation had greatly improved[1].

Table 2
Teacher Turnover and Reasons 1989-1992

	1989		1990		1991		1992	
	n	%	n	%	n	%	n	%
Turnover	3700	20.5	4240	21.77	3840	19.61	3567	18.16
Change school	1807	10.0	1919	9.85	1538	7.86	1326	6.75
Wastage	1893	10.5	2321	11.92	2302	11.76	2241	11.41
Total number of teachers	18062		19447		19579		19637	
Reasons of Turnover	n	%	n	%	n	%	n	%
a) Taking up employment in other schools	1807	10.00	1919	9.85	1538	7.86	1326	6.75
b) Taking up employment outside the teaching profession	543	3.00	532	2.73	360	1.84	426	2.17
c) Migration	285	1.58	484	2.48	510	2.60	553	2.82
d) Further study	301	1.67	396	2.03	423	2.16	426	2.17
e) Other reasons								
Retirement	58	0.32	78	0.40	89	0.45	113	0.58
Illness	20	0.11	22	0.11	19	0.10	32	0.16
Death	5	0.03	14	0.07	9	0.05	7	0.04
Marriage/Child-bearing /Child-raising	43	0.24	62	0.32	51	0.26	75	0.38
f) Other reasons	243	1.35	151	0.78	265	1.35	159	0.81
g) Unknown	395	2.19	582	2.99	576	2.94	450	2.29
Total	3700	20.48	4240	21.77	3840	19.61	3567	18.16

Wastage = b+c+d+e+f+g

Source: *Teacher Survey* 89-92, Education Department.

Table 3
Breakdown of Teacher Turnover 1989-1992

Category	1989		1990		1991		1992	
	n	%	n	%	n	%	n	%
Age bracket								
18-30	2472	58.0	2266	53.5	1916	49.9	1744	48.9
31-40	1244	29.2	1379	32.5	1223	31.8	1131	31.7
41-50	336	7.9	355	8.4	400	10.4	398	11.2
51-60	149	3.5	178	4.2	248	6.5	241	6.8
61+	59	1.4	61	1.4	53	1.4	53	1.5
Rank								
Principal	47	1.4	47	1.4	33	.9	42	1.3
PGM							17	.5
SGM	250	7.4	250	8.5	289	8.3	314	9.8
GM	1887	55.7	1880	55.1	1816	52.0	1678	52.2
PAM							4	.1
SAM	60	1.8	58	1.7	84	2.4	63	2.0
AM	109	3.2	109	3.2	112	3.2	124	3.9
CM	1034	30.5	1031	30.2	1159	33.0	972	30.2

Source: Teacher Survey 89-92, Education Department

In 1989, 74.7% of school heads considered recruitment was worse than in 1988. In 1990, the percentage was reduced to 60.8 and in 1991, it dropped drastically to 7.7. On the contrary, in 1989 only 2.7% of heads considered the situation of recruitment was better than in 1988, but in 1991, over 60% considered it was better than the year before. The heads were able to recruit a large number of returnees, many of whom were former teachers and overseas graduates, to fill the vacancies.

During the period under study (Table 4) there was a decline in turnover among the young teachers (from 58.0% of 2472 teachers in 1989 dropping to 48.9% of 1744 teachers in 1992). But the turnover rate for SGM teachers was on a rise (from 7.4% in 1989 to 9.8% in 1992). There was also a rise in turnover for teachers who were over 41 years of age

[1] A survey conducted by the Hong Kong Institute of Personal Management (SCMP, July 13,1994) showed that the situation of brain drain was slowing down and the number of returnees was on the rise. However, the same survey reported an increase of teacher departure.

Table 4
Recruitment of New Teachers According to Views of Heads 1989-1991 (in %)

	1989	1990	1991
Worse than last year	74.7	60.8	7.7
Similar to last year	22.6	28.0	29.3
Better than last year	2.7	9.0	63.0

Source: HKSSSC (1989-1991), Teacher Survey, Table 5.

(from 7.9% to 11.2% for age 41-50 and from 3.5% to 6.8% for age 51-60 from 1989 to 1992). This increased loss of experienced teachers has caused serious concern. Unless they are replaced by equally experienced teachers, the quality of education will suffer.

It is very likely that schools in Hong Kong will continue to suffer from high turnover and wastage until and possibly beyond 1997. It is not sure how long this situation will last. What is certain is that the feeling of uncertainty and helplessness will dominate the educational scene for some years to come.

Analysis — Teacher Turnover Intention

The second part of the analysis involves the questionnaire data. In the preliminary analysis, the whole set of data were used while in subsequent multiple regression and logistic regressions analysis, only the voluntary, avoidable turnover database was used.

Of the 1650 questionnaires mailed to the 55 randomly selected secondary schools, a total of 608 usable questionnaires were returned, representing a response rate of 36.8%. The demographics of the respondent teachers did not deviate from that of the population of teachers.

A study of the turnover intention showed that 3 teachers from the returned questionnaires indicated that they had found and accepted an offer. Six responded that they were negotiating for a new job and 51 responded that they were actively involved in job search activities. These constitute a 9.8% (60 cases) of the sample, not a high figure when compared with the annual turnover rate of about 20% from 1989 to 1992. This may be due to the timing of the survey which was done in March and early April, when many schools had not started the recruitment exercise. Another 53.4% (325) teachers indicated that they would seriously consider other reasonable offers. The ultimate turnover of this group depended on how the intention developed into active job searches and final outcomes. Only 36.7% (223) teachers clearly indicated that they would stay.

A breakdown of the teachers' turnover intentions was given summarised in Table 5.

There are a number of observable features in Table 5. First, up to the age of 40, almost 2/3 of teachers in each age bracket (<29, 30-35 and 36-40) had the intention, some had even taken active action, to leave the schools. Even between the age of 41 to 45, there was still half of the teachers thinking about leaving. Only the vast majority (76.9%) of teachers

Table 5
Turnover Intention by Demographics (in %)

	Intention to Leave				Total	No Intention to Leave
	Accepted new job	Attended interview	Looking for job	Seriously Considering		
Sex						
Male	0.40	1.10	8.20	51.10	61.60	39.4
Female	0.70	1.10	8.70	56.00	66.50	33.5
Age						
<=29	0.50	2.70	13.70	55.20	72.10	27.90
30-35	1.20	0.60	6.90	52.00	61.70	39.30
36-40			5.70	58.50	64.20	35.80
41-45			4.90	49.40	53.30	45.70
>=51				23.10	23.10	76.90
Rank						
GM	0.80	1.70	11.00	59.00	72.50	27.50
SGM			4.20	46.40	50.60	49.40
PGM			3.70	22.20	25.90	74.10
Tenure						
<2 yrs		5.30	10.50	55.30	71.10	28.90
2-5 yrs	1.00	1.00	9.40	55.00	66.40	33.60
6-10 yrs		0.90	9.60	49.10	59.60	40.40
>10 yrs			3.00	53.00	66.00	44.00
Previous Schs Taught						
0	0.40	1.80	10.50	43.90	56.60	43.40
1			1.30	5.20	57.40	63.90
36.10						
2	1.00		6.90	2.70	70.60	29.40
3-5	1.50		9.20	62.50	72.30	27.70
>5				33.30	50.00	83.30
16.70						
Careers Choice						
Yes	0.50	0.50	7.50	50.60	59.20	40.80
No	0.60	2.40	10.60	59.40	72.90	27.10
Present Tenure						
1-2 yrs				60.00	60.00	40.00
3-5 yrs			13.90	55.60	69.40	30.60
6-10 yrs		2.20	10.90	57.60	70.70	29.30
>10 yrs	0.70	1.00	7.60	52.10	61.40	38.60

over 51 would settle down to the job. This age bracket coincides with the teacher rank and experience. A large group of GM teachers (72.5%) and teachers with less than 2 years experience (71.1%) had intention to leave. Even half of the SGM's (50.6%) and more than half of the teachers with 10 years experience contemplated such an idea. Second, teachers who had changed more schools before had a higher intention to leave schools. Also more teachers (72.9%) who failed to choose teaching as their first career had higher intention to leave.

As a whole, the analysis gives one the impression that the number of teachers who thought about leaving their schools was much higher than the actual 20% turnover rate. There seemed to be a lot of restlessness in the secondary schools in Hong Kong. It is not clear what possible effect this would have on the quality of education. But one thing is certain: continuous high mobility of teachers will cause great damage to a school.

Table 6
Reliability Coefficient of Constructs

Constructs	No. of items	Cronbach's alpha
Participation eg I often take part in deciding school policy. I often take part in deciding textbooks and curriculum.	4	.8421
Student Quality eg The students here have good discipline The students here have good performance	2	.7682
Light Workload eg I have a light teaching load. I have a light non-teaching load.	2	.6909
Variety in School Activities eg There are different activities going on in the school every day. Teachers here like to have variety of work.	3	.5498
Job Satisfaction (JS) 13.8332 eg I am very satisfied with my salary here. I am very happy with the present school policy and practice.		
Organization Commitment (OC) eg I am proud to be a member of this school. I recommend this school to my friend as teacher.	7	.8329
Job Involvement (JI) eg I am very much involved in my job. My main interests are related to my present job.	7	.7125

Reliability of Constructs

The working environment items were regrouped to form seven Constructs. They are: Participation, Student Quality, Light Workload, Variety in school activity, Job Satisfaction (JS), Organization Commitment (OC), and Job Involvement (JI) (a sample of the items are included in Table 6 for information). The Constructs were tested of reliability. The results are in Table 6.

The Cronbach's alpha (Norusis, 1990) among the items of all the constructs showed high degree of internal consistency within each scale. The lowest Cronbach's alpha is Variety in School Activities (0.5487) and is still acceptable since the items in this scale are positively correlated to each other and there are only 3 items in the scale.

Antecedents of Job Satisfaction (JS), Organizational Commitment (OC), and Job involvement (JI)

Regression analysis of the SPSS Advanced Statistics (Norusis, 1990) was carried out using JS, OC and JI separately as dependent variable. Table 7 showed that all three models were significantly different from a model containing the constant only. However, the F value for the regression equation with JI being the dependent variable (3.5) was relatively much smaller than the corresponding values for JS and OC (15.8 and 20.5) respectively. The difference was more significant when we examined the value of the adjusted R square. The equation using JI as depended variable only accounted for 6% of the variation in the predicted values, while in the other two equations of JS and OC, the percentage of variation explained amounted to 28.0% and 33.7% respectively.

The regression equations reveal some very interesting findings. The variables of Variety in School Activities and Participation have positive coefficients significantly different from zero at 0.05 or 0.01 levels for the three equations of Job Satisfaction (JS), Organizational Commitment (OC) and Job Involvement (JI). The variables of Rank and Student Quality have positive coefficients significantly different from zero at 0.05 or 0.01 levels for JS and OC. The variables of Light Workload and teaching as the first Careers Choice have positive coefficients significantly different from zero at 0.01 levels for JS and JI respectively. On the other hand, the variables of Present Tenure, and number of Previous Schools Attended have negative coefficients significantly different from zero at 0.05 or 0.01 levels for JI.

Table 7
Results of Linear Regression using Job Satisfaction, Organizational Commitment and Job Involvement as Dependent Variables

Variables	Job Satisfaction	Organizational Commitment	Job Involvement
Sex	-.0020 (.0389)	-.0721 (.0375)	.0263 (.0446)
Age	.1054 (.0688)	.0509 (.0661)	.0191 (.0787)
Rank	.1721** (.0528)	.1193* (.0508)	.0428 (.0604)
Tenure	-.0023 (.0972)	-.0397 (.0934)	.1060 (.1111)
Present Tenure	-.1589 (.0876)	-.0835 (.0842)	-.2266 * (.1002)
No of Previous School	-.0762 (.0456)	-.0844 (.0438)	-.1118* (.0522)
Careers Choice	-.0310 (.0380)	-.0588 (.0366)	.1533 ** (.0435)
Qualification	.0309 (.0382)	.0129 (.0367)	.0409 (.0437)
No of Children	.0447 (.0375)	.0142 (.0361)	.0148 (.0430)
School History	-.0341 (.0386)	-.0319 (.0372)	.0157 (.0442)
Participation	.1888 ** (.0447)	.3032 **(.0430)	.1194* (.0512)
Student Quality	.2272 ** (.0380)	.2747 ** (.0365)	.0568 (.0435)
Light Workload	.1415 ** (.0381)	-.0138 (.0367)	-.0882 (.0436)
Variety in Sch Activities	.2332** (.0383)	.2284** (.0368)	.1049* (.0439)
N	542	537	537
Adjusted R Square	.2769	.3371	.0611
F	15.794**	20. 468**	3.490**

Note: Standardized coefficients are in parenthesis.
*$p < 0.05$ **$p < 0.01$

The regression data provide evidence that the involvement of teachers in decision making in schools policy issues indeed contributes directly to teachers' commitment to the school, their job satisfaction and involvement. Variety in school activities also carries the same effect on teachers job satisfaction, involvement and commitment. Since PGM's and SGM's are experienced teachers who are given administrative or functional responsibility in schools, it is understandable that they were more satisfied with their job and felt committed to the schools. Moreover, student quality is an important factor in determining the overall learning atmosphere of a school. It is no wonder that teachers felt committed to the school and drew greater job satisfaction when the school had good quality students who observed discipline and had good academic records. Likewise, teachers were more satisfied when the workload in both teaching and non-teaching was light. Teachers who chose teaching as their first career choice were ready to identify with and cared more about their job than those who didn't make such a choice. On the other hand, among those teachers who changed schools, job involvement was related to those who changed less often. In order words, the frequent movers were also those who were those much less involved in their work. And among those teachers who were new to a school, their job involvement was higher.

Logistic Regression Analysis

In logistic regression the probability of an event occurring is directly estimated as

$$\text{Prob(event)} = 1 / (1+e^{-z})$$

where e is the base of the natural logarithms and Z is the linear combination

$$Z = B_0 + B_1X_1 + B_2X_2 + B_3X_3 + \ldots + B_pX_p$$

in which X_1 are the independent variables; B_0 and B_1 are coefficient estimated from the data using the maximum-likelihood method.

The logistic coefficients can be interpreted as the change in the log odds associated with a one-unit change in the independent variable. (The odds of an event occurring are defined as the ratio of the probability that it will occur to the probability that it will not.) The probability estimates will always be between 0 and 1, regardless of the value of Z (Norusis, 1990). In the present study, the intention to leave, which covered the range from 'found and accepted an offer' to 'seriously consider a reasonable offer' was assigned a value of '1'. In this category, 3 teachers (.008%) accepted an offer, 6 teachers (1.5%) were negotiating for another job, 60 teachers (15%) were actively looking for jobs and 325 (82%) would seriously consider a reasonable offer. Hence this new grouping largely represents the state of mind of teachers who would consider a reasonable offer. Those who clearly indicated an intention to stay was assigned a '0'.

The logistic regression model of the SPSS Advanced Statistics (Norusis, 1990) was employed to treat the data. All the variables were entered into model at the same time and the results of the regression were listed in Table 8.

The -2 log likelihood chi-square, indicated that the models did not differ significantly from a perfect fit model. In addition, the model chi-square that tested the null hypothesis that the coefficients for all of the terms except the constant were 0, was significant at the 0.001 level. This meant that the model fitted significantly better than did a model containing only the constant. Results of the two tests implied that the model under discussion did not significantly

Table 8
Logistic Regression of Teacher Turnover

Variables	Coefficient(B)	Exp (B)
Constant	6.4980 (4.2909)	
Job Satisfaction	-1.3519** (.2912)	.2587
Job Involvement	.4925 (1.1780)	1.6365
Organizational Commitment	-.1384 (1.2892)	.8708
JI × OC	-.1349 (.3574)	.8738
Sex	-.0754 (.2239)	.9273
Tenure	-.0259 (.0455)	.9744
Variety in School Activities	-.1925 (.2227)	.8249
Student Quality	.0670 (.1224)	1.0693
Participation	-.0780 (.1254)	.9249
Light Workload	-.0728 (.1482)	.9298
Age	-.0100 (.0250)	.9901
Present Tenure	-.0264 (.0397)	.9740
No. of Previous Schools	.3049* (.1245)	1.3565
Careers Choice	-.5069* (.2438)	.6024
Qualification	.0805 (.1066)	1.0838
No. of Children	.0220 (.0712)	1.0223
History of School	-.1013 (.1713)	.9037
N	532	
-2 log likelihood	566.5	
Model chi-square	131.6**	
Goodness of fit	545.9	

Note: Standardised errors are in parenthesis
$*p < 0.05$ $**p < 0.01$

differ from a perfect model and fitted better than a model with no variable at all.

In our model, Wald statistics showed that Job Satisfaction ($p<0.01$) and the first Career Choice ($p<0.05$) had negative coefficients significantly different from zero and the number of Previous Schools attended ($p<0.05$) had positive coefficient significantly different from zero. The present study shows among the three antecedent constructs, only Job Satisfaction is directly related to turnover intention. In order words, only teachers who are less satisfied with their job have higher intention to leave schools. The present study fails to establish a direct relation between organizational commitment and the intention to leave. One possible explanation is that the sentiment of commitment is explained to a large extent by job satisfaction.

However, the present study shows that two importanct factors are directly related to turnover intention. One is the decision to choose teaching as the first career choice and the other is the number of previous schools teachers have attended.

Bluedorn (1982) argued that when individuals entered an organization they had certain expectations which would interact with the experience in the organization to produce satisfaction. Those who chose teaching as their first career choice certainly had expectations different from those who didn't make such a choice. It is possible that the former were more ready to sustain hardship in teaching and make their job work. Even if they did not have satisfaction all the time, the chance of their staying in the professions was higher.

The finding that turnover intention is directly related to the higher number of schools teachers attended is revealing but not surprising. It simply confirms the fact that those who have attended many schools before are potential leavers. They are the rootless group and it may be difficult to ask them to be committed to the school. Maybe there is a need to mount a different study to understand their behaviour.

Discussion

In Hong Kong, the teaching profession is not the only one suffering from a high turnover rate. In the past few years, almost all professions, bankers, accountants, nurses, civil servants, were affected and some were harder hit than the teaching profession. But none of those in other professions have a similar burden that teachers have in the education of the future generations. Both the surveys and the intention study confirm that young teachers under the age of 30 have the highest turnover rate. In our intention study, 95% of the turnover teachers are GM's, and most of them are untrained.

In the study, two developments are worth taking note of. The first is the rising turnover rate of experienced teachers and among the SGM's. The other is the large number of teachers from different ages and status who are thinking about leaving the schools. The fact that close to 2/3 of teachers were thinking of leaving is disturbing. It will create diffi-

culties for schools in cultivating staff commitment and planning for long term objectives.

In the present study, job satisfaction, organization commitment, and job involvement are positively and significantly related to participation in decision making and variety in school activities, This finding supports the argument that involvement of teachers is rewarding both to the teachers and the schools. In the jargon of management, this is referred to, as empowerment. Teachers who are empowered will find meaning in their work and will be more ready to commit themselves to the goals of the schools, hence more ready to stay.

Light school workload is related to job satisfaction and job satisfaction is related to intention to leave. Hence schools should treat this factor with care. Effort should be made to lighten the workload of teachers, particularly workload which is not teaching-related. Teachers usually respond very positively if they know that the school is making such efforts even though the result may not be satisfactory. Perhaps this point is related to the factor of participation. Often teachers do not even mind working hard if they see their work as meaningful and fruitful. When such working relationship and atmosphere are in place, the intention of leaving will be drastically reduced.

The background to the factor of student quality which is significantly related to job satifaction and commitment is quite unique in Hong Kong. In a way this explains why local schools have been so keen to engage in ways to promote their school image to attract better quality students.

Further Methodology Considerations

One concern in our intention study is the effect of timing on the study of turnover. There has been little discussion by researchers on this point. Reviews of journal articles on turnover studies showed that many articles did not report the exact time period or seasons of the year when the study was conducted (e.g. Abelson, 1987; Smart, 1990; Jenkins, 1993). In our investigation, we discover that timing of the survey might be a vital factor. Different careers exhibit certain time attributes to the turnover behaviour. In Hong Kong teachers usually change their jobs when the school term ends. Leaving school in the midst of a school term is considered undesirable. Hence most teachers change their jobs at the end of a school year. ,Conducting a survey without considering this point would certainly yield unusually high measurement errors.

In the present study, logistic regression was used to investigate the prediction of turnover intentions. The analysis indicates whether the individual variable is significantly related to turnover intentions. It also tells whether the predicted values using the model fit the actual data collected. However, it does not evaluate the causal relationship among antecedents in the models. Models having the same variables but with different paths thus cannot be differentiated using logistic regression analysis. One approach to investigate the causal relationship among the antecedents is to use path analysis basing on linear regressions.

Another desirable methodology may be the use of structural equation modelling (SEM) using latent variables. SEM works with a system of equations and allows for simpler inclusion of measurement error thus making it an advancement over ordinary path analysis basing on OLS regressions. Although SEM requires a much stronger statistical and mathematical background and a more powerful computer package to deal with, it is worthwhile to adopt it for further studies because of its merits.

Researchers have emphasised that turnover is a continual process. The growth of dissatisfaction combining with other factors gradually develop into turnover behaviour. The present study offers only a cross sectional examination of the leaving intention of teachers. How the intentions develop into turnover remains to be investigated. Such consideration suggests a longitudinal study to follow-up cases at specified time intervals in order to have a thorough understanding of the turnover process.

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