Professional Characteristics and Teacher Professionalism of Secondary School Teachers

Chia Soo Keng, Diong Cheong Hoong and Toh Kok Aun

Abstract

Questionnaire responses from 338 secondary school teachers were analysed to relate teachers’ professional characteristics (comprising teaching experience, professional development, and academic and professional qualifications) to teacher professionalism, defined in terms of the two dimensions, teaching competence and commitment to teaching. The Professional Development and Teacher Professionalism Instrument (PDTPI) was devised to measure professional development and teacher professionalism. Inferential statistical techniques employed in the study showed that the variable, teaching experience, was not related to teacher professionalism. Professional development, on the other hand, was found to be an important variable, with the mean teacher professionalism scores between the “high” and “low” professional development groups being significantly different. The study also found that academic qualification was not related to teacher professionalism. However, teachers who had higher professional qualifications were found to possess a higher degree of teacher professionalism.

Descriptors: Teacher professionalism, professional development, teaching competence, commitment to teaching

Introduction

Teachers come from diverse backgrounds. The teaching profession, therefore, is not made up of a homogeneous group of people. One area of concern is whether these teachers display the same degree of teacher professionalism. The differences among teachers may lie in their teaching experience, academic and professional qualifications and the professional development activities they have been exposed to (Lam, 1983).

An attempt to study teacher professionalism and the way it relates to the professional characteristics of teachers is valuable to education in two ways. It has implications for the future planning of professional development activities and the planning of teachers’ career paths. Understanding the degree of teacher attitudinal professionalism is of the utmost importance to all concerned with the education system. Where the professional attitudes deteriorate, it would be difficult to see how the quality of education demanded by the public could be ensured (Lam, 1983).

In a study of teachers’ developmental changes during the various stages of their careers, Prick (1989) underscored the point that for some teachers, entering mid-career could be a period of either professional growth, decline or
stagnation depending upon personal and organisational factors. For those teachers for whom mid-career is a decline, Lortie (1986) raises a question of concern. Will teachers who have been discontented with their work serve as attractive role models for those considering teaching as a career and for young entrants to the profession? With schools as the potential ground for future talents and the government’s emphasis on excellence in education (Ministry of Education, 1987), there is a need to examine the professional characteristics of teachers and the relevance of these characteristics to teacher professionalism.

This paper examines the relationship between teaching experience, which is closely related to the teaching career, and teacher professionalism. The paper further investigates the relationship between teacher professionalism and teacher professional development, comprising in-service learning, independent learning and cooperative learning. Finally, it examines the relationship between teacher professionalism and teachers’ academic and professional qualifications.

**Teacher Professionalism Research**

Teacher professionalism is a large concept encompassing several dimensions (Hall, 1967; Territo, 1988). According to Miros (1990), professionalism can be broadly defined in three ways through the work exemplified by Becker (1962), Pavalko (1971) and Cullen (1978). Although the dimensions used to define professionalism vary from one researcher to another, all the three definitional approaches reveal a basic set of general standards of professionalism. Based on these dimensions, he put together a 13-item Likert-type questionnaire which he used to measure teacher professionalism. His Teacher Professionalism Statements Questionnaire had 13 statements on: independent practice; code of ethics; licensing; single major professional association; exclusive practice rights; body of specialised knowledge; application of knowledge in professional practice; collaboration among members; candidate selection; rigorous and protracted study/training period; high status; high compensation; and lifetime commitment.

However, a distinction needs to be made between attitudinal and structural attributes of professionalism. According to Hall (1968), professionalism can be defined at the organisational and individual level. There are five attitudinal attributes at the individual level: use of the professional organisation as a major referent; belief in service to the public; belief in self-regulation; sense of calling to the field; and autonomy. Hall also noted that professionals work in four distinct types of setting: individual private practice, and organisational bases of which there are three types. The first organisational setting is the autonomous professional organisation in which the work of the professional is subject to his own rather than to external or administrative jurisdiction. In this case the professionals are the major determiners of the organisational structure, since they are the dominant source of authority. The second organisational setting is one in which the professional employees are subordinated to an externally derived system. Examples are public schools, libraries and social work agencies, all of which are affected by externally, often legislatively based structuring. The level of professional autonomy is considerably lessened in such a setting. The third organisational setting is the professional department which is part of a large organisation. Examples of this are the legal or research departments of many organisations.

Teachers belong to the second organisational setting, which is the heteronomous professional organisation. In this sense, the attitudinal aspects, rather than the structural aspects of professionalism, become more relevant in defining teacher professionalism. According to Hoyle (1980), professionalism describes the quality of practice; it describes the manner of conduct within an occupation, how members integrate their obligations with their knowledge and skill in a context of collegiality, and their contractual and ethical relations with clients. Morrow (1988) also placed more emphasis on the attitudinal aspects, defining professionalism as the extent to which one is committed to
one’s profession, and noting that individual members can vary in the degree to which they identify with their profession and endorse its values.

Research Questions

The following research questions will be examined:

1. Do teachers with a greater length of experience demonstrate a higher degree of teacher professionalism?
2. How does professional development correlate with teacher professionalism?
3. Do teachers with a higher degree of professional development demonstrate a higher degree of teacher professionalism?
4. Do teachers with higher academic and professional qualifications demonstrate a higher degree of teacher professionalism?

Procedure

A Professional Development and Teacher Professionalism Instrument (PDTPI) was developed to measure teacher professionalism and professional development. The PDTPI questionnaire is made up of three parts. Part I of the questionnaire measured professional development, and Parts II and III measured teaching competence and commitment to teaching – the two dimensions of teacher professionalism. Teacher professional development was measured using 14 Likert-type questionnaire items. Teacher professionalism was measured using 31 Likert-type attitudinal questionnaire items. Of these, 16 items measured teaching competence. The remaining 15 items measured commitment to teaching. Teaching experience was measured as a continuous variable in terms of years of experience. The teachers were also classified into seven groups based on years of teaching experience. For professional qualifications, they were classified into three groups: (i) Further Professional Diploma of Education, (ii) Diploma of Education and (iii) Certificate of Education. Teachers were also classified into five groups in terms of their academic qualifications: (i) General Certificate of Education (GCE) ‘O’ Level, (ii) GCE ‘A’ Level, (iii) Bachelor of Arts (BA)/Bachelor of Science (BSc), (iv) BA/BSc Honours and (v) Others.

To ensure content validity, the items were initially judged by a panel comprising three school principals, five teachers and four education specialist officers, before pilot-testing of the instrument was carried out. The panel was asked to consider whether the two attitudinal dimensions, teaching competence and commitment to teaching, were accurate measures of teacher professionalism. They also commented on the 31 items measuring teacher professionalism and the 14 items used to measure professional development. After receiving the written comments from the panel members, a few of the questionnaire items were revised, but these were primarily to adapt the items to suit local respondents and to improve item clarity.

To determine the reliability of the instrument, the study was piloted in three secondary schools in September 1990. Out of a total of 158 teachers in the three piloted schools, 102 questionnaires were received, giving a return of about 64.5%. Six of the questionnaires were rejected as they were incompletely filled. Therefore 96 out of 158 respondents (60.7%) were included in the pilot study.

Using the Cronbach Alpha formula, the reliability index was computed for each of the three parts of the PDTPI using the Statistical Analysis System (SAS). The results (Table 1) show high Cronbach Alpha values for all three parts: professional development ($\alpha = 0.83$), teaching competence ($\alpha = 0.95$) and commitment to teaching ($\alpha = 0.90$).

Factor analyses were carried out for each of the three parts of the instrument, professional development, teaching competence and commitment to teaching. The factor analysis of items for professional development produced four factors, instead of three as conceptualised. The fourth factor, however, showed a low factor loading of 1.41 compared to 2.74, 2.48 and
Table 1: Reliability Tests for Professional Development, Teaching Competence and Commitment to Teaching

<table>
<thead>
<tr>
<th>Part</th>
<th>Sub-Scale</th>
<th>Cronbach $\alpha$</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Professional development</td>
<td>0.83</td>
</tr>
<tr>
<td>II</td>
<td>Teaching competence</td>
<td>0.95</td>
</tr>
<tr>
<td>III</td>
<td>Commitment to teaching</td>
<td>0.90</td>
</tr>
</tbody>
</table>

2.38 for the first three factors. It was decided to reject the fourth factor. The three factors were named independent learning, cooperative learning, and in-service learning. For teaching competence, two factors as conceptualised had loadings of 5.58 and 5.51. The two factors were named subject pedagogy and managing learning. For commitment to teaching, three factors were produced, with loadings of 4.27, 2.58 and 2.07. The three factors were named personal commitment, collegiality, and student-directed commitment.

The individual loadings for all the questionnaire items, using the rotation method (varimax), showed values greater than 0.4, except one item measuring the variable student-directed commitment, which had a value of 0.142. The loadings for 11 of the 14 questionnaire items measuring professional development had values greater than 0.6, and for the 31 items measuring the two dimensions of teacher professionalism, 29 items had values greater than 0.6.

For the main study, a purposive sample (Wall, 1986) of 18 schools was selected to reflect a representation of school type and size. The schools selected for the sample included both neighbourhood government secondary schools and government-aided secondary schools with a staff size ranging from 23 to 82 teachers.

A formal letter was sent to the principals of these schools to explain the nature of the study and to seek permission to survey their teachers. Eleven of the school principals agreed to participate in the study. These 11 schools represent approximately 8% of the total number ($n = 142$) of secondary schools in Singapore. The study sample comprising 338 teachers (Table 2) was made up of 123 male teachers and 215 female teachers. This ratio of male to female respondents (1:1.7) closely reflects the national ratio (1:1.6) (Ministry of Education, 1990). All the teachers in the selected schools were asked to respond to the PDTPI questionnaire. Three hundred and fifty out of the 520 questionnaires distributed to the schools were returned to the researcher. Of this number, 12 could not be used because of incomplete information provided in their returns. Therefore, the number of teachers in the study was 338.

The questionnaires collected were sorted and the teachers' Likert-type responses were entered as raw data. Hypotheses were generated and these were tested using: (i) Pearson product-moment correlation, (ii) the General Linear Model Procedure, (iii) Duncan's multiple-range test, and (iv) the t-test.

Table 2: School Type and Number of Teachers Involved

<table>
<thead>
<tr>
<th>School Type</th>
<th>No. of Teachers Involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government secondary school</td>
<td>285</td>
</tr>
<tr>
<td>Government-aided secondary schools</td>
<td>53</td>
</tr>
</tbody>
</table>
Results

The statistical findings are reported according to the four research questions.

Do teachers with a greater length of experience demonstrate a higher degree of teacher professionalism?

The results showed no significant correlation between teaching experience and teacher professionalism (Table 3).

There was also no significant difference in the mean teacher professionalism scores among seven groups of teachers with different years of teaching experience (Table 4).

Table 3: Correlations for Teaching Experience and Teaching Competence, Commitment to Teaching and Teacher Professionalism

<table>
<thead>
<tr>
<th></th>
<th>Teaching Competence</th>
<th>Commitment to Teaching</th>
<th>Teacher Professionalism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching experience</td>
<td>0.08 (p = 0.14)</td>
<td>0.02 (p = 0.68)</td>
<td>0.06 (p = 0.27)</td>
</tr>
</tbody>
</table>

Table 4: Difference in the Mean Teacher Professionalism Scores for Seven Groups of Teachers with Different Years of Teaching Experience, Using the General Linear Model Procedure

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience</td>
<td>6</td>
<td>1982.03</td>
<td>330.34</td>
<td>1.32</td>
<td>0.25</td>
</tr>
<tr>
<td>Error</td>
<td>331</td>
<td>82585.69</td>
<td>249.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>337</td>
<td>84567.72</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5: Inter-Correlations for Independent Learning, Cooperative Learning, In-Service Learning and Teacher Professionalism

<table>
<thead>
<tr>
<th></th>
<th>Independent Learning</th>
<th>Cooperative Learning</th>
<th>In-Service Learning</th>
<th>Teacher Professionalism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent learning</td>
<td>1.00</td>
<td>0.33**</td>
<td>0.48**</td>
<td>0.39**</td>
</tr>
<tr>
<td>Cooperative learning</td>
<td></td>
<td>1.00</td>
<td>0.43**</td>
<td>0.27**</td>
</tr>
<tr>
<td>In-service learning</td>
<td></td>
<td></td>
<td>1.00</td>
<td>0.39**</td>
</tr>
</tbody>
</table>

** p ≤ 0.01
How does professional development correlate with teacher professionalism?

There was significant correlation between teacher professionalism and each of the three variables of professional development: independent learning, cooperative learning and in-service learning (Table 5).

Do teachers with a higher degree of professional development demonstrate a higher degree of teacher professionalism?

Two groups of teachers were identified – the high professional development group and the low professional development group. The teachers belonging to the high professional development group were those whose scores on the professional development section of the PDTPI were 43 and above, while the teachers belonging to the low professional development group were those with scores of 35 and below. One hundred and seven teachers were identified for each of the high and low professional development groups. The t-test results (Table 6) underscore the importance of professional development in teachers’ lives. The high professional development group perceived themselves as having a higher degree of teacher professionalism.

Do teachers with higher academic and professional qualifications demonstrate a higher degree of teacher professionalism?

For the variable professional qualifications, the General Linear Model procedure showed significant difference in the mean teaching competence scores for the three different groups of teachers, classified in terms of their professional qualifications: Further Professional Diploma of Education, Diploma of Education and Certificate of Education. Duncan’s multiple-range test, however, revealed that the difference was only between teachers with training as a Head of Department (HOD) and teachers without such training. Although there was no significant difference in the mean commitment to teaching scores among the three groups, the mean teacher professionalism scores among the three groups of teachers were significantly different. Duncan’s multiple-range test revealed that the mean teacher professionalism score for teachers with HOD training was significantly higher than those without HOD training (Table 7).

For the variable academic qualifications, teachers were classified under five groups: (i) General Certificate of Education (GCE) ‘O’ Level, (ii) GCE ‘A’ Level, (iii) Bachelor of Arts (BA)/Bachelor of Science (BSc), (iv) BA/BSc Honours

Table 6: Difference of Means of Teacher Professionalism Scores for High and Low Professional Development Groups

<table>
<thead>
<tr>
<th>Professional Development Group</th>
<th>N</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>t</th>
<th>DF</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>107</td>
<td>121.2</td>
<td>14.0</td>
<td>7.38</td>
<td>203</td>
<td>0.0001</td>
</tr>
<tr>
<td>Low</td>
<td>107</td>
<td>105.3</td>
<td>17.3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 7: Duncan’s Multiple-Range Test of the Mean Teacher Professionalism Scores of the Three Groups of Teachers with Different Professional Qualifications

<table>
<thead>
<tr>
<th>Group</th>
<th>FPDE</th>
<th>CE</th>
<th>DE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>128.4</td>
<td>112.8</td>
<td>111.6</td>
</tr>
</tbody>
</table>

Any two groups with a common underscore are not significantly different (p = 0.05)

FPDE = Further Professional Diploma of Education (the HOD training course)
CE/DE = Certificate of Education/Diploma of Education (the pre-service training course; all teachers who are without the HOD training course have gone through the pre-service training course)

Table 8: Difference in the Mean Teacher Professionalism Scores for Five Groups of Teachers with Different Academic Qualifications, Using the General Linear Model Procedure

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience</td>
<td>4</td>
<td>158.93</td>
<td>39.73</td>
<td>0.16</td>
<td>0.96</td>
</tr>
<tr>
<td>Error</td>
<td>333</td>
<td>84408.79</td>
<td>253.47</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>337</td>
<td>84567.72</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

and (v) Others. The results showed no significant difference (F<1.0) in the mean teaching competence scores, the mean commitment to teaching scores and the mean teacher professionalism scores among the five different groups of teachers (Table 8).

Discussion

Teaching experience and teacher professionalism

The results have shown that teaching experience per se does not seem to contribute to the professionalism of teachers, although many qualitative studies on teachers' professional lives (Burden, 1982; Christensen et al., 1983; Sikes et al., 1985) have suggested that teachers who have more teaching experience generally have a higher degree of teacher professionalism, since they have been in the service for a longer time and have grown on the job. The findings in this study suggest that a high level of teacher professionalism can be found in teachers of all age groups, in the sense that a new teacher may possess a level of teacher professionalism equal to that of a more experienced teacher. This reflects a similar finding in the report by the United Federation of Teachers (Harrington, 1987). The findings can also be interpreted to suggest that some new teachers may, in fact, demonstrate a higher level of teacher professionalism than more experienced teachers. According to Ryan and Kokol (1990) the older group of teachers in such a situation can be a liability to schools, and they have, therefore, suggested that it may be useful to recognise the more experienced teachers' views and needs in a developmental perspective. A better understanding of the developmental stages of
the professional lives of teachers could strengthen teachers’ performance in the classroom (Feiman and Floden, 1981).

There is, therefore, the need to examine closely the process of teacher professionalisation. In the local context, a number of factors may explain this lack of differentiation in the level of teacher professionalism among different groups of teachers with varying years of teaching experience. One factor is the rigid hierarchy in schools where specific guidelines are provided by the school administrative staff (usually the Principal, the Vice-Principal and Heads of Department), and teachers are given clear instructions to follow these guidelines. In such an environment, especially in schools where teachers’ views and needs are not considered, teachers merely follow directions because they are not encouraged to think and make decisions for themselves. Hall (1967) identified “autonomy” as one of the five dimensions of attitudinal professionalism. To encourage teacher professionalism, teachers need to be actively involved in making decisions, especially those that affect them, in the schools where they teach.

Another factor that could possibly explain the lack of differentiation in the level of teacher professionalism is that all teachers, whether they are new teachers or experienced teachers, are treated equally. In most schools, experienced teachers and new teachers are usually allocated a workload that does not take into consideration their teaching experience. Teachers with experience are not given opportunities to act as “mentors” (Harrington, 1987) which would challenge them to develop professionally on the job, so that they become more professional teachers in terms of professional competence and commitment to the profession.

While there have been attempts to improve the service conditions for selected teachers who take up administrative positions with responsibilities (such as Head of Department), little has been done to consider the needs of those who choose to remain as practising teachers. For this group of teachers, the types of professional development activities that are available to them are usually in-service courses that enable them to keep abreast of pedagogical developments in their subject area or prepare them to teach subjects outside of their area of specialisation.

**Professional development and teacher professionalism**

The results in this study have highlighted the importance of professional development as a variable in relation to teacher professionalism. Teachers who were actively involved in professional development programmes perceived themselves to have a higher level of teacher professionalism. This finding suggests that a high degree of teacher professionalism among teachers is often not the result of greater teaching experience merely in terms of the number of years of service rendered. It is more likely to be due to teachers’ cognitive development (Oja, 1989) (which is professional growth on the job) in terms of vigorous involvement in professional development activities and optimising the opportunities given to carry out these activities. In gearing towards excellence in schools (Ministry of Education, 1987), there should, therefore, be greater emphasis placed on teachers’ professional development, and all professional development programmes, especially in-service learning, must recognise that teachers are different. This means that programmes should be designed to meet teachers’ real needs to ensure continual professional growth on the job.

However, the professional development of teachers should not merely be seen in terms of opportunities for teachers to attend in-service programmes. There is a need to examine new perspectives about teacher development that have contributed to a higher level of professionalism among teachers. For example, Christensen et al. (1983) explained the need for school administrators to be able to identify teachers going through different stages in their careers and to provide these teachers with appropriate challenges so that they continue to develop professionally. Based on evidence collected from qualitative studies of teachers, Christensen et al. (op. cit.) showed that these intervention measures contributed to greater
teacher professionalism. The educational system in Singapore does provide opportunities for teachers to be given new challenges. Selected teachers assume positions of responsibility, for example, Head of Department. Teachers are also posted to the various branches within the Ministry of Education, for example, the Research and Testing Branch, as professional officers. While these challenges will help to maintain a teacher’s enthusiasm in the teacher professionalisation process, there is still a need to examine other challenges. According to Harrington (1987), teachers themselves should be strongly encouraged to come up with new challenges and be given the administrative support to implement them.

A review of the literature also shows that there are other ways to encourage a higher level of professionalism among teachers, besides providing in-service programmes. Hall (1968) identified the need for members of a profession to have an organisation with which they identify strongly. An effective professional organisation will contribute to greater teacher professionalism by providing organisational support, encouraging teachers to learn from and with other teachers, and promoting greater teacher autonomy. Harrington (1987) described how the setting up of teachers’ centres helped practising teachers to develop professionally. Harrington pointed out that these centres contributed to greater teacher professionalism as they served as venues for teachers from various schools within a zone to meet, discuss and share matters related to teaching, such as subject pedagogy and content. In these centres, experienced teachers are also given opportunities to serve as “mentors” to new teachers. In the local context, teachers do not have a professional organisation with which they identify strongly. In The Next Lap – the government’s blueprint for the future – there are, however, plans to build teacher centres.

**Qualifications and teacher professionalism**

With professional development activities contributing positively to teacher professionalism, we should not be surprised to find a significant relationship between professional qualifications and teacher professionalism. Teachers with higher professional qualifications perceive themselves to have a higher degree of teacher professionalism. The finding makes a strong and succinct point, which is that teachers who possess a higher degree of teacher professionalism are likely to be the ones who have the opportunities to attend professional development activities, especially in-service programmes which lead to professional qualifications, such as the Further Professional Diploma of Education. Being “chosen” for this programme provides the self-fulfilling motivation. The feeling of being selected as a model teacher is compelling enough to spur a teacher to higher echelons of teacher professionalism. This is not necessarily a bad thing. Only one cannot select everybody to be a Head of Department.

To encourage a higher degree of teacher professionalism there is, therefore, a need for the educational system to include the acquisition of further professional qualifications as a part of teacher professionalisation. On its part, the school administration should provide an environment in which teachers feel encouraged to attend programmes which lead to further professional qualifications. For example, teachers could be granted sabbatical leave to attend such programmes. There is also the need to ensure that more opportunities for teachers to attend courses which lead to higher professional qualifications are made available not only to teachers identified by the Ministry but also to those teachers concerned with their cognitive development.

An unexpected finding in this study is that there is no difference in the level of teacher professionalism among graduate and non-graduate teachers and also among graduates with general and honours degrees.

This implies that teacher professionalism is not dependent on academic qualifications, in the sense that a non-graduate teacher may possess greater professional competence and show more commitment to the profession when compared to a graduate teacher. The educational system, however, perceives teachers’ academic
qualifications as a more important prerequisite than actual teaching performance when considering career development opportunities, so graduate teachers are more likely to be considered for positions of responsibility. Those with higher academic qualifications are also given higher remuneration. Educational administrators need to examine the consequences of continuing such a practice, especially in schools where a non-graduate teacher is allocated the same workload as a graduate teacher.

Implications

In terms of the relationship between teaching experience and teacher professionalism, the findings of this paper highlight an area of concern. Educational administrators should consider the needs of senior teachers who possess more years of teaching experience but a lower degree of teacher professionalism compared to new teachers. To ensure that teachers continue to grow on the job, the literature supports the notion that the timing and content of professional development programmes should be planned with sensitivity to the evolution of teachers' needs and concerns (Christensen et al., 1983). What has to be done, therefore, is for the education system to recognise the different career stages of the professional lives of teachers and to ensure that the different needs in these stages are met. If teachers are to grow professionally, then suitable opportunities during the different stages of their career must be provided for, so that they do not stagnate (or worse, decline) on the job. Evidence for this is best exemplified by teachers in Singapore who have attended the Further Professional Diploma of Education programme. Having undergone a career development programme specially tailored for them has led to this group of teachers perceiving themselves to possess a higher degree of teacher professionalism compared to other groups of teachers in the study. The finding, therefore, highlights the need to look at differentiated professional development programmes for teachers.

There is also the near absence of cooperative learning as a professional development activity among secondary school teachers. Since the findings indicate that all three variables of professional development – independent learning, cooperative learning and in-service learning – contribute to teacher professionalism, there is a need for school administrators and teachers to examine other professional development activities. At present, teachers see little relevance in, have no opportunities to be involved in, or are unaware of, cooperative learning as a meaningful professional development activity. However, participation in cooperative, collegial groups can expand teachers' levels of expertise by supplying a source of intellectual provocation and new ideas (Shulman and Carey, 1984). It also allows teachers to break the grip of psychological isolation from other adults that characterises the teacher's classroom environment (Sarason, 1971).

Finally, the results show no significant relationship between academic qualifications and teacher professionalism. In view of this, the Singapore education system needs to tap into the pool of non-graduate teachers who possess a high degree of teacher professionalism. These teachers should be given opportunities to upgrade themselves and to hold responsible positions. This would go a long way towards helping to ensure that the teaching service is made up of teachers who are both competent and committed to the profession.

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the Study of Education.


