

Concerns on the Pre-service and In-service Primary Physical Education Student Teachers 職前及在職師訓小學體育教師的教學關注

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Abstract

Teacher Concerns Questionnaire (TCQ) was administered to 75 Hong Kong pre-service and in-service student teachers of primary physical education prior to their teaching practice or the commencement of teaching supervision period. Results showed no significant differences in all concern scale scores between groups and the three-factor structure of TCQ could not be replicated. Recommendations for future research were made: First, a modified TCQ for physical educators needs to be specifically designed. Second, qualitative data should be collected for more in-depth study of teacher concerns. Third, longitudinal research design should be used. Fourth, other factors that are likely to influence teacher concerns should also be considered.

摘要

75位職前及在職小學師訓體育教師於實習/視導開始前填寫「教師關注問題問卷」(TCQ)。結果顯示職前及在職小學師訓體育教師關注的問題並無顯著差異。因素分析結果亦沒有出現TCQ的三因子結構。作者建議未來進行有關研究時應：(一)設計及採用專為探討體育教師關注問題的問卷；(二)使用質的研究方法、更深入地探討教師關注問題；(三)進行長期追縱研究；及(四)考慮其他可能影響教師教學關注問題的因素。

Introduction

Teachers' concerns have been an important issue in teacher education research (Borich & Taylor, 1992; Pigge & Marso, 1997; Rogan, Smith & Sanche, 1993). Identifying specific teacher concerns of both pre-service and in-service teachers would help improving and redesigning teacher education programmes, both in contents and methods. Based on the concerns expressed by a group of pre-service teachers, Fuller (1969) hypothesized a three-stage teacher concerns theory. According to Fuller, teacher concerns are defined as teachers' perceived apprehension, distress, or interest regarding the interrelationships of themselves and the elements of their work environment. Teachers are supposed to have three types of concerns, namely self, task, and impact. Self-concern is about teacher's own adequacy and survival in the teaching environment. Task concern relates to art of teaching. Impact concern represents a concern for student needs. Fuller (1969) suggested that teacher concerns were developmental in

nature as teachers develop self concern first, then with the increase of teaching experience, they develop task concern, and then later, develop impact concern. Such notion has been put to test and the results are mixing. Findings of some studies supported this notion (Butler & Smith, 1989; O'Sullivan & Zielinski, 1988; Richards & Gipe, 1987) while some did not (Adams, 1982; Hord, Rutherford, Huling-Austin, & Hall, 1987; Pigge & Marso, 1987; Tabachnick & Zeichner, 1984). It seems that not all teachers experience the stages of teacher concerns in a progressive sequence, but have both persisting concerns and newly emerging concerns simultaneously.

Teacher concern studies were also conducted in physical education teachers. Research findings are also contradictory. In a study conducted by McBride, Boggess, and Griffey (1986), results supported Fuller's (1969) teacher concern theory. They found that pre-service physical education teachers reported higher scores on self-concern whereas in-service physical education teachers

reported higher scores on impact concern. With time, physical education teachers concerns seemed to shift from self-survival needs (self) to student learning needs (impact). In another study, however, Wendt and Bain (1989) obtained mixed results. They found that in-service physical education teachers had got lower scores in self concern and impact concern, when compared to pre-service physical education teachers. By examining a longitudinal data set, Wendt and Bain (1989) found that only self-concerns did change over time. They concluded that physical educators did not follow Fuller's (1969) teacher concern theory and that TCQ could only measure self concerns, but not the other two teacher concerns.

Behets (1990) also noted that change in teacher concerns in pre-service teachers were not in accordance with Fuller's (1969) theory. He studied 100 pre-service physical educators in Belgium and found these student teachers had their impact concerns scores higher than their two other teacher concerns scores during their teaching practice. Behets (1990) further looked into the issue by comparing the TCQ results with a content analysis of logbook entries of ten student teachers. The two sources of information depicted two very different pictures. Hence, Behets questioned the validity of TCQ for evaluating teacher concerns of pre-service teachers. Indeed, other researchers also queried the use of TCQ in teacher concerns studies. Fung (1993) found that TCQ scores could not differentiate pre-service from in-service Hong Kong physical education teachers. Recently, using confirmatory factor analysis, Meek (1996) demonstrated that TCQ was a poorly fitting instrument for teacher concerns. McBride (1993) believed that the working environment of physical education teachers was different from other subject or curriculum areas, he adapted the TCQ and developed a special TCQ-PE for the physical education setting based on the responses of 500 in-service physical educators. He claimed that the TCQ-PE is suitable for the teacher concerns study involving the in-service physical educators.

In this study, Fuller's (1969) teacher concerns theory was put to test with a sample of Hong Kong student teachers of physical education. Teacher concerns on pre-service and in-service student teachers were compared. According to Fuller's theory, significant differences between pre-service and in-service student teachers of physical education should be obtained in TCQ results. In particular, it was hypothesized that pre-service student teachers of physical education would be found having higher scores in self concerns whereas in-service student teachers of physical education would be found having higher scores in impact.

Method

Subjects

Thirty pre-service and forty-five in-service student teachers of primary physical education participated in the present study. All subjects were in their final year of their three-year teacher education programme. Curriculum contents and lecturing staff of the teacher education programme that the two groups of subjects studied were basically the same. Subjects in the pre-service group (13 females and 17 males) aged from 20 to 24 (mean = 22.1), had completed their teaching practicum in general subjects but had no teaching experience in physical education. Subjects in the in-service group (37 females and 8 males) aged from 22 to 37 (mean = 26.6), had 2 to 10 years (mean = 4.9 years) of teaching experience in primary physical education.

Instrument

Teacher Concerns Questionnaire (TCQ) (George, 1978) was used to tap for teacher concerns. The TCQ contains 15 items, with 5 items for each of the three teacher concerns scales (see Table 1). Self concern scale consists of items 3, 7, 9, 13, and 15. Task concern scale consists of items 1, 2, 5, 10, and 14. Impact concern scale consists of items 4, 6, 8, 11, and 12. Each item is scored on a 5-point Likert scale, with 1 meaning not concerned and 5 meaning extremely concerned. Based on a sample of 1,109 pre-service teachers, in-service teachers, and principals, George (1978) confirmed that the reliability of TCQ - Alpha coefficients of the three teacher concern scales were found to be .80 (self), .67 (task), and .83 (impact) and one-week test-retest reliability coefficients were .79 (self), .71 (task), and .77 (impact). TCQ was originally written in English; so backward translation procedures were employed to produce a Chinese version of TCQ. Firstly, the original TCQ (TCQ1) was translated to Chinese (CTCQ) by a secondary school English subject teacher who had been briefed on the purpose of the study and Fuller's (1969) teacher concern theory. Another secondary school English subject teacher who was kept blind to the purpose of the study and other relevant information then translated CTCQ back to English (TCQ2). The two English subject teachers then compared TCQ1 and TCQ2 subsequently and jointly refined CTCQ until it became an acceptable Chinese version of TCQ.

Table 1. Items of Teacher Concerns Questionnaire (George, 1978)

1. Lack of instructional materials	Task
2. Feeling under pressure much of the time	Task
3. Doing well when a supervisor is present	Self
4. Meeting the needs of different kinds of students	Impact
5. Too many instructional duties	Task
6. Diagnosing student learning problems	Impact
7. Feeling more adequate as a teacher	Self
8. Challenging unmotivated students	Impact
9. Being accepted and respected by professional persons	Self
10. Working with too many students each days	Task
11. Guiding students towards intellectual and emotional growth	Impact
12. Whether each student is getting what he/she needs	Impact
13. Getting a favourable evaluation of my teaching	Self
14. The routine and inflexibility of the teaching situation	Task
15. Maintaining the appropriate degree of class control	Self

Procedures

Subjects of the study were administered the Chinese version TCQ during a class before their teaching practice (the pre-service group) or commencement of their teaching supervision period (the in-service group). Purpose of the study was explained to all subjects verbally by the researchers before the questionnaire was distributed. Subjects were told that return of questionnaire was voluntary and they were not required to show their identity on the questionnaire.

Statistical Analysis

Multivariate Analysis of Variance (MANOVA) was employed to test group differences in TCQ both at scale level (self, task, and impact) and at item level (item 1 to item 15). Significance level was set at .05, two tails. To confirm or otherwise the factor structure of TCQ, a confirmatory factor analysis (CFA) was done using EQS (Bentler, 1995).

Results

Group Differences

Means and standard deviations of the TCQ at scale level (self, task, and impact) and at item level (item 1 to item 15) were shown as in Table 2 and Table 3 respectively. There were no significant differences between pre-service group and in-service group in teacher concerns, neither at scale level

($F = 2.214, p > .05$) nor at item level ($F = 1.193, p > .05$). Fuller's (1969) teacher concern theory was not supported in this study. However, if individual scales and items were examined separately, pre-service group was found to be higher in self scale and in item 3 ($p < .05$).

Another way of looking at the difference between the two groups of student teachers was to see what events they concerned more and what events they concerned less. Subjects in pre-service group rated item 15 ('maintaining the appropriate degree of class control', self concern), item 6 ('diagnosing student learning problems', impact concern) and item 8 ('challenging unmotivated students', impact concern) as their two highest concerns. The in-service group, on the other hand, rated item 8 ('challenging unmotivated students', impact concern), item 6 ('diagnosing student learning problems', impact concern) and item 11 ('guiding students towards intellectual and emotional growth', impact concern) as their two highest concerns.

The two lowest rated items in the pre-service group were item 9 ('being accepted and respected by professional persons', self concern) and item 4 ('meeting the needs of different kinds of students', impact concern), whereas in the in-service group, item 2 ('feeling under pressure much of the time', task concern), item 14 ('the routine and inflexibility of the teaching situation', task concern) and item 13 ('getting a favourable evaluation of my teaching', self concern) were rated the two lowest.

Construct Validity of the Teacher Concerns Questionnaire

A confirmatory factor analysis (CFA) was conducted with the EQS (Bentler, 1995) using maximum likelihood estimation procedure to test the construct validity of the TCQ. The CFA provided information indicating how well the data so collected fits the a priori measurement model of TCQ. All 15 TCQ items were assigned to one of the original TCQ factors (self, task, or impact) that are assumed to be orthogonal. Chi-square goodness of fit values χ^2 ($df = 90, N=75$) = 243.038, $p = 0.0$, suggesting that the hypothesized measurement model and the sample data were significantly different. The χ^2 is frequently significant since it is quite strict (Joreskog, 1969) and is sensitive to sample size (Bollen & Long, 1992). So, three other fit indices were also used: Normed Fit Index (NFI), Comparative Fit Index (CFI), and root mean square residual (RMSR). For some time, Bentler and Bonett's (1980) NFI had been the practical criterion of choice. However, the NFI has shown a tendency to underestimate fit in small samples. Bentler (1990) revised NFI to take sample size into account and proposed the CFI. Both NFI and CFI range from 0 to 1, with a value above .90 indicating acceptable goodness of fit (Bentler, 1995). The NFI and CFI in this study were .43 and .52 respectively, indicating a poor fit of the hypothesized

measurement model. Based on these findings, it is possible to conclude that the TCQ model is not appropriate for the data of the pre-service and in-service student teachers of physical education.

Table 2. Group Differences between Pre-service and In-service Student Teachers of Physical Education in Teacher Concerns at Scale Level.

Concerns	Pre-service (n=30)		In-service (n=45)	
	M	SD	M	SD
Self	3.98	0.46	3.76	0.47
Task	3.83	0.52	3.56	0.60
Impact	4.00	0.60	3.98	0.58

Table 3. Group Differences between Pre-service and In-service Student Teachers of Physical Education in Teacher Concerns at Item Level.

Item no.	Pre-service Student Teachers		In-service Student Teachers			Sig. (2-tailed)
	Mean	SD	Mean	SD	F	
1	4.07	0.87	3.76	0.88	2.26	.137
2	3.73	0.78	3.33	1.02	3.29	.074
3	4.03	0.85	3.40	1.14	6.78	.011
4	3.70	0.88	3.73	0.81	0.03	.866
5	3.73	0.91	3.47	1.04	1.31	.255
6	4.13	0.86	4.04	0.74	0.23	.634
7	3.90	0.84	3.87	0.76	0.03	.859
8	4.13	0.82	4.16	0.77	0.01	.905
9	3.57	1.04	3.71	0.76	0.48	.489
10	3.80	0.81	3.73	0.81	0.14	.710
11	4.03	0.85	4.04	0.80	0.00	.954
12	4.00	0.79	3.93	0.65	0.16	.692
13	4.07	0.74	3.40	0.94	2.39	.126
14	3.80	0.71	3.40	0.94	3.92	.051
15	4.33	0.76	4.00	0.83	3.13	.081

Discussion

Results of this study must be interpreted cautiously due to relatively small sample size. Besides, all subjects in the sample came from the same teacher education institution. Their teacher concern might reflect requirements of that particular institution. Lastly, the problems arose by using cross sectional research design should be noted. The present study assumed that difference between groups could be attributed to difference in physical education teaching experience. In fact, the subjects in the pre-service group might not have developed in the same way as the subjects in the in-service group. Nonetheless, despite all these limitations, results of the present study did provide information for further clarification of the teacher concerns issue, particularly in pre-service and in-service student teachers of physical education.

According to Fuller (1969), beginning teachers progress through an initial concern about self, a later concern for the task of teaching and toward the concern for pupils and their learning. She also assumes that teachers must have resolved earlier developing concerns before they can address later developing concerns. The process of moving from one stage to another is regarded as a developmental growth pattern and might take period of time, experience and practice within their own career.

In this study, both in-service and pre-service groups expressed greater concern for impact than for either self or task. Similar findings were reported by previous studies (Behets, 1990; Boggess et al., 1985; Fung, 1993; Piggie & Marso, 1997; Reeves & Kazelskis, 1985; Wendt & Bain, 1989). Some researchers suggested that concern for task was reduced during student teaching (Wendt et al., 1981; Wendt & Bain, 1989). The pre-service group in

the present study did have their teaching practice in general subjects during their second year, this might explain why both groups had low task concern scores.

The concern for impact was higher in the pre-service group than in the in-service group. Findings were in line with that reported by other studies (Boggess et al., 1985; Wendt, 1979; Wendt et al., 1981; Wendt & Bain, 1989). According to Fuller's developmental theory, there should be an increase in concern for impact as experiences accumulate. However, the impact scores of both sample groups ran counter to the Fuller's theory. One possible explanation was that subjects in the pre-service group had gained teaching experience in general subjects and thus responded to the impact items idealistically. Moreover, the average teaching experience of the subjects in in-service group was only 4.9 years. They could hardly be categorized as very experienced. It is likely that they paid more attention to some realistic teaching concerns.

The only significant difference found was related to self concern. As predicted by Fuller's theory, the pre-service group expressed greater concern for self than the in-service group. Other researchers also reported similar findings (Fung, 1993; Reeves & Kazelskis, 1985; Wendt & Bain, 1989). It seemed that the teaching concerns of most pre-service teachers were about self survival aspect. Indeed, gaining teaching experience had helped the in-service teachers reduced their self concerns. This might account for the significant difference on self concerns scores between the pre-service and in-service groups.

Moreover, subjects in the pre-service group mostly concerned about the class management problems. As in other studies, beginning teachers frequently mentioned classroom discipline as one of their major teaching concerns (Behets, 1990; Fernandez-Balboa, 1991; Field, 1994; Rikard & Knight, 1997; Veenman, 1984). They all understand that teachers must first establish good classroom order before attempting to cover content-related material (Doyle, 1986). The other self concern that pre-service group cared about was related to being evaluated whilst on teaching practice. This was another common mentioned concern of most pre-service teachers (Behets, 1990; Capel, 1996). In this study, "doing well when a supervisor is present" is the only item that could differentiate the two groups. The in-service student teachers mostly concerned the student learning problems. Gaining teaching experience might lead them to concentrate on the effectiveness of teaching.

The pre-service group did not care much about their acceptance by other profession persons. Indeed, they all knew that the main purpose of teaching practice was to gain teaching experience. Relationship with the practicing school teaching staff was not their major concern. They might be indifferent to the staff

members of the practicing school and did not concern the acceptance by others.

Teaching experience enhances confidence in teaching. As the in-service groups gained some experience in teaching primary school physical education, they became more adapted to the teaching environment and might feel less pressure when teaching.

MANOVA results indicated that there were no significant difference between the pre-service group and in-service group, neither at scale level nor at item level. Fuller's concern theory could not be substantiated in the present study.

The results of present study also showed that the developmental concerns of the sample groups were not in sequence as predicted. As in the study of Sitter and Lanier (1982), student teachers did not experience concern in a particular sequence. They did not resolve one concern before moving to the next, but dealt with them simultaneously. Rutherford and Hall (1990) commented that assessment method might also influence the results of the identification of developmental shifts. They proposed "quantitative assessments indicate they are not sequential, qualitative assessments are more supportive of the developmentalness of the stages—but not totally affirmative (p. 15)". Moreover, Hall (1979) found that practicing teachers took about five years to move from personal concerns to impact concerns. His findings suggested that pre-service students might take years of teaching experience before they go through these developmental phases. Fung (1993) also pinpointed the length of teaching experience as a critical issue for consideration in teacher concerns theory. Since the average teaching experience of the in-service group in the present study is only 4.9, the length of teaching experience of the in-service group might be insufficient to warrant the Fuller's theory.

Indeed, the three discrete stages of student teachers' development in learning to teach should only be treated as guidelines. Since student teachers' progress was much dependent on the interaction between individual students, their teacher education programmes, and the school context in which they undertook their practical experience (Furlong & Maynard, 1995).

Teachers might show more concern on one stage than the others depending on their own practical school experience (Rutherford & Hall, 1990). Although three distinct concern categories were identified and defined, since each individual was variable, Furlong and Maynard (1995) suggested that overlapping of these stages could be expected.

Confirmatory factor analysis could not substantiate the 3-factor structure of TCQ. Based on the findings of the present study, we can conclude that the TCQ is not suitable for evaluating

concerns of both Hong Kong pre-service and in-service student physical education teachers.

Rutherford and Hall (1990) noted that it was not possible to tell whether Fuller's theory was faulty or the problem was due to the instrument, or a combination of two. They suggested that using qualitative assessment techniques might help providing clearer picture of the issue. Recently, McBride (1993) had re-designed the TCQ and developed an instrument especially for measuring physical educators' stages of concerns. Research findings supported that this instrument was reliable and valid for evaluating in-service physical educators' teaching concerns (Conkle, 1996; McBride, 1993). It seemed that using specific TCQ instrument might be the future research direction and developing a special TCQ for the pre-service physical educators was a necessity.

Conclusion

To conclude, better understanding about the concerns of the physical education student teachers have helped the teacher educators much when giving advises during supervisions. In addition, the teacher educators can also plan their teacher preparation programmes better according to the needs of the student teachers. Findings of the researches on student teacher concerns are invaluable to teacher educators. Further research on pre-service and in-service physical education teachers' concerns is recommended. Several points of conducting future research on teachers concerns theory should be highlighted. First, using qualitative assessment techniques and specific quantitative instrument for measuring physical educators' teaching concerns. This will help to provide further information on teacher developmental theory issue. Second, longitudinal studies of change in concerns of teacher development are needed. It can give better picture of how the teachers go through the developmental phases. Lastly, there is also a need to investigate other significant factors (gender, teaching behaviours, teaching environment) besides teaching experience that might influence the developmental concerns of physical education teachers.

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