

The Development of Scales to Measure Teacher and School Executive Occupational Satisfaction ®

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Abstract

Interest in teacher 'stress' and 'burnout' and their relationship to teacher well being has a long and distinguished history. However, there has been criticism of this research endeavour for, among other problems, its conceptual narrowness and its lack of psychometric rigour (Guglielmi & Tatrow, 1998).

An interest in the consequences for teachers of the changing and turbulent international context of education led the researchers to initiate an international project investigating teacher and school executive career satisfaction, motivation and mental health. This project sought to develop a model of teachers' occupational well-being that was wider than a focus on 'stress', and, as noted, included occupational motivation and satisfaction as well.

This paper reports on a sub-aspect of that research, the development of scales to measure teacher and school executive satisfaction with the work of teaching and its context carried out in Australia, England, New Zealand and the USA. As well as revealing relative satisfaction with various facets of the teaching role, these scales also prove useful in explaining how teachers and school executive view the construction of their respective educational and social contexts.

Background to the Study: The International Teacher 2000 Project

The last few decades have seen almost unprecedented interest in and pressure on education systems in many countries. There have been high hopes for education in the post World War II period, and various stakeholders and interest groups, not the least of which are governments, have sought to influence educational outcomes both academic and social. While the achievements of education have in many cases been highly successful, there have also been criticisms, both genuine and unfounded.

Teachers obviously occupy a crucial position in seeing the expectations and hopes of society, groups and individuals brought to fruition, and how teachers feel about aspects of their role is of importance in this process of meeting society's desired outcomes for education and in educating the youth of today for life in tomorrow's world.

The International Teacher 2000 Project sought to address the issue of how teachers feel about their work today through investigation of a number of key questions:

- Why do teachers enter teaching?
- How do teachers feel about teaching?
- How do teachers feel they are regarded by their employer and society generally?
- What aspects of their role do teachers find to be satisfying
- What do teachers find to be dissatisfying?
- Are satisfaction levels changing?
- Is teacher pre-service and in-service training adequate to meet the needs of today's and tomorrow's teachers?
- How are teachers coping with change and the pressures being placed upon them?

The Teacher 2000 Project arose because of a desire to find answers to the above questions and to benchmark teacher satisfaction and mental health levels so that informed decision making could occur. The project sought to extend and test the findings of earlier interview based work involving teacher resignation (Dinham, 1992), the impact of teaching on teachers and their partners (Dinham, 1997), and the manifestations and implications of the ageing teacher population (Dinham, 1996).

The initial Australian phase of the project involved teachers and school executive at government schools in Western Sydney and was completed in 1997 (Dinham & Scott, 1996a; 1996b; 1997). As a result of interest in this work, replications were launched in 1997 in England through Nottingham Trent University, in New Zealand through Massey University and in the USA through Rowan University (in progress).

The theoretical framework for the project was provided by earlier studies, including the 'two-factor' theory of occupational satisfaction emanating from the work of Herzberg, Mausner and Snyderman (1959), Sergiovanni (1967), and interview based work with resigned teachers conducted by Dinham (1992).

Method

Instrument

The instrument was a machine readable self-report questionnaire. Minor changes were made to the Australian version, with wording of items made consistent with terminology employed in the English and New Zealand contexts. A detailed description of methodology may be found elsewhere (Dinham and Scott, 1996b, 1998a), but briefly, the instrument contained the following: demographic items, seven orientation to teaching and two preparedness to teach items (true/false), 75 satisfaction/dissatisfaction with teaching items (seven point Likert scales), two Likert scale items measuring overall satisfaction and change in satisfaction since beginning teaching, the Commitments scale (40 item version, Novacek & Lazarus, 1990), the 12 item form of the General Health Questionnaire used as a measure of mental distress/stress, and several opportunities for open ended comments.

Data from completed surveys were computer scanned and analysed using SPSS, while open-ended responses were subject to content analysis using NUDIST (QSR, 1994).

Participants

Sampling

Separate teams undertook the project in each country and sampling methods employed by the four teams were varied to suit each local context.

Australia

The Metropolitan West Region was one of the largest of the 10 regions in the New South Wales Department of School Education public school system, which in total employs over 50,000 teachers.

Western Sydney was chosen because of convenience of access and because of its heterogeneity, ranging from small rural primary schools to large urban high schools, and from schools with large proportions of students with languages other than English to schools with negligible numbers of students with this background. Economically, the region covers a wide spectrum, from areas of high unemployment and poverty, to pockets of affluence. However, the region is usually portrayed as being 'disadvantaged' in comparison with the rest of Sydney.

An invitation to participate was made to the principals of over one third of government schools in the region, ensuring a representative sample of schools, given the heterogeneity of the region. Data were collected in a pilot study and a second data collection step, both of which comprised the first phase of the project (Dinham & Scott, 1996a). In the second phase, responses to the instrument from additional schools were obtained and fuller analysis of the data took place (Dinham & Scott, 1996b; 1997).

Overall, 47 of the region's 185 primary schools, 19 of 54 secondary schools, and 5 of the region's 16 Schools for Specific Purposes (SSP) took part with 2,336 surveys distributed to the 71 schools.

England

Schools were selected by taking every fifth school appearing in the lists of eight local education authorities (LEAs). The decision was made to over-sample Grant Maintained schools and so all GMS in each LEA area were also included. In all, 661 schools were approached to participate with 114 Head Teachers [principals] consenting. Of these, two were from Brighton-Hove, 12 from Cornwall, 34 from Kent, 12 from Leeds, 12 from Cheshire, two from Tower Hamlets, none from Richmond and 40 from Nottinghamshire. In all, 2,384 questionnaires were posted to participating schools.

The Head Teachers of a sample of schools were contacted to inquire why they had declined to participate. The most common reason given was that the school was soon to have its OFSTED inspection. Other HTs explained that their staff were already too heavily burdened and they, the HTs, did not wish to ask them to commit any more time to work or work related activities.

New Zealand

A stratified, random cluster sample was drawn with the objective of obtaining at least 300 primary and at least 300 secondary teachers. Sampling frames were lists of all state and integrated primary schools (including Intermediate schools), and all state and integrated secondary schools in the southern half of the North Island of New Zealand. Two separate random samplings were carried out, one from each frame. The number of schools was determined by staffing numbers at each school drawn, and sampling was continued until a target of 500 possible respondents was reached in each sector.

Once schools were identified, approaches were made to arrange a visit by a team member to a regular staff meeting to introduce the project and seek co-operation of staff. Questionnaires were distributed at the meeting and arrangements made for their return when completed.

USA

US data were collected from public schools in the state of New Jersey. New Jersey was chosen because it has 609 school districts (more than any other state), yet it is one of the smallest states. It also contains a wide range of schools and whilst many school districts appear to be suburban-like, these suffer many of the problems of inner-city school districts. There are also many 'one building' school districts with as few as 100 students in the entire district.

The study was designed as a systematic random sample, stratified by county, and weighted according to gender. The sample included a total of 1056 individuals, including 89 administrators/supervisors (55 male and 34 female) and 968 classroom teachers (252 male and 716 female). Each of the 21 counties in the state was represented in the study in proportion to its contribution of administrators/supervisors to the whole. In all, individuals from 117 public schools were included in the sample.

Questionnaires were distributed and collected in the following manner. In New Jersey, school district superintendents assemble monthly as part of regularly scheduled county roundtable meetings. The researchers met with the executive committee of the council of chief school administrators and obtained their cooperation in distributing and collecting the survey questionnaires. Thereafter, the school district superintendents distributed the materials to the school principals who in turn disseminated them at random to teachers and selected administrators and arranged for their return when completed.

Sample Description

Table One: Mean Age, Length of Service and Time in Current School, by Country.

	Years
	Age Service Current School
Australia	40 15 6
England	42 16 6
New Zealand	42 15 7

USA 45 18 13

Australia

Of the 2,336 surveys distributed there were 892 respondents (38%), 65% of whom were women and 35% men. For comparative purposes, in 1989 the Australian teaching force was 61% female and 39% male (Logan, Dempster, Berkeley, Chant, Howell, & Warry, 1990: 1).

The mean age of respondents was 40 years (women = 39, men = 42), with a range of 20 to 66. These means, while lower than the NSW DSE/DET overall, are close to the means for the then Metropolitan West Region which has tended to be younger in profile than more favoured regions in the state.

Of women respondents, 56% were primary trained and 44% high school trained, while 32% of men were primary trained and 68% high school trained. Mean length of service as a teacher was 15 years (range less than one to 37 years), and mean length of time in current school was 6 years (range less than one to 31 years).

Including the position of Advanced Skills Teacher, 44% of the women were in promotions positions, and 55% of the men (48% of the total sample).

The great majority (84%) of the 892 respondents were born in Australia. For comparative purposes, The Australian College of Education (ACE), in a research study on the profile of the Australian teaching service, found that 83% of Australian teachers were born in Australia (Logan, et. al., 1990: 5).

Only 9% of participants had a first language other than English, while the earlier ACE study found 12% of Australian teachers had this background (Logan, et. al., 1990: 5).

England

Of 2,384 surveys distributed to 114 schools, 609 were returned (26%). Mean age of participants was 42 years (range 22 to 62 years). Mean length of service was 16 years (range less than one year to 41 years) and mean length of time in current school was 6 years (range less than one year to 29 years). Only 4% of the sample reported having a first language other than English.

In all 70% of participants were women and 30% men, whilst 40% (24% of men, 47% of women) taught in the infants-primary range, 2% in middle schools, 54% in secondary schools (69% of men and 48% of women) and 5% in schools classed as 'other', chiefly special schools. (Rounding of percentages may mean that figures do not total 100%.) Table Two contains the description of participants, by sex and type of school in which they were teaching.

Eleven percent of participants in the English study were Head Teachers (13% of men and 9% of women), 7% were deputy heads (8% of men and 7% of women) and 23% were heads of faculties, years or departments (32% of men, 19% of women). A further 25% described themselves as classroom teachers with extra responsibilities and salary (22% of men and 26% of women), 30% as classroom teachers (23% of men and 33% of women), only 1% were supply teachers (no men and 1% of women) whilst 4% (3% of men and 4% of women) described themselves as 'other' (specialists of various sorts including librarians).

New Zealand

A total of 1,002 surveys were distributed to 71 schools with 565 returned (56%). The mean age of New Zealand participants was 42 years (range 21 to 66), mean length of service 15 years (range less than one year to 45 years) and average service in current school was 7 years (range less than one year to 35 years). Six percent reported having a first language other than English.

Of the 565 participants, 71% were women and 29% were men. Eighteen percent of the men and 4% of the women were school principals (total = 8%), 9% of the men and 10% of the women were deputies (total = 10%), whilst 30% of the men and 23% of the women described themselves as senior teachers or heads of departments (total = 25%). Thirty seven percent of the men and 47% of the women were classroom teachers (total = 44%), whilst 5% of the sample described themselves as relieving teachers (men = 2%, women = 6%) and 9% as 'other' (men = 4%, women = 11%).

Primary school teachers accounted for 53% of the sample (men = 32%, women = 62%), teachers in intermediate schools 8% (men = 7%, women = 8%), secondary teachers 37% (men = 58%, women = 29%) and 2% taught in mixed schools (men 3%, women = 2%).

USA

1056 surveys were distributed and 668 were returned, giving a response rate of 63%. A check of selected demographics (gender, age, length of service, and academic qualifications) suggests that the respondents do not differ from the population in a systematic way.

Of the 668 respondents 66% of were women and 34% men. The mean age of respondents was 45 years (women = 44, men = 46). Mean length of tenure in current school was 13 years (women = 12, men = 15) and mean length of time in the teaching service was 18 years (women = 17, men = 22).

Twenty two percent of respondents were primary teachers (women = 46%, men = 30%), 16% taught in middle schools/junior highs (women = 16% men = 14%) and 43% in high schools, (women 37%, men = 53%).

Fourteen percent of the women were in promotions positions, and 39% of the men, with 41% of the sample overall holding some promotion position. The great majority (98%) were born in USA and 98% were also of English speaking background.

Results: Constructing the Scales

Development of the Satisfaction Model Stage One: Australian Data

The 75 satisfaction items in the questionnaire were based on results of a previous qualitative phase of the research (Dinham, 1992). This work had suggested 16 broad aspects of teachers' satisfaction with teaching and its context.

Given an hypothesised structure, the appropriate analytical method is Confirmatory Factor Analysis (CFA) and LISREL 8 (Joreskog & Sorbom, 1993) was used to conduct the analysis.

The first analysis on the Australian data, based on the 16 factors, failed to run and further examination revealed that the model was poorly specified.

Exploratory Factor Analysis (EFA) was conducted using SPSS and CFA was used to explore solutions suggested by EFA. An advantage of using CFA in this context is that it allows the error of measurement associated with items to be correlated. A correlated error is extra covariance between items that is not explained by the existing factor structure. A pattern of correlated errors suggests the existence of another factor not currently in the model.

Initial EFA, using all 75 items, maximum likelihood estimation and Oblimin rotation suggested 17 factors on the eigen value criteria (>1) and inspection of the scree plot that the final solution would contain between 8 and 18 factors. The 17 factor model explained 56% of

variance in the data and was overall not a good fit to the data $\chi^2 = 3761$ $df = 1636$ $p < 0.001$. There were 76 (2%) non-redundant residuals in the reproduced correlation matrix.

Given that one of the objectives of the analysis was to produce a coherent set of scales describing teacher satisfaction, items were removed using a number of criteria. First, one item of items that correlated very highly (0.85) (suggesting they were not measuring anything additional) were removed. Second, items that were highly skewed, and lacked variation ('motherhood' items that were 'automatically' given the same answer by the vast majority) were removed. Finally, items that load on a large number of factors were also removed. All decisions were made in the context of the qualitative understanding of items and their relationships with each other.

The final model contained eight factors composed of 42 of the original 75 items. The

overall χ^2 of 2151.29 ($df = 772$ $p < 0.001$), is not unusual given the large number of parameters being estimated. The RMSEA = 0.047, (it is recommended that RMSEA be

below 0.05 and 90% confidence interval not calculated due to large χ^2), GFI = 0.88 (recommended > 0.9) NFI = 0.87 (recommended > 0.9). Although the model did not reach acceptable scores on all criteria, the RMSEA was acceptable and the solution conceptually acceptable.

Cross Validation of the Satisfaction Model

The model has been examined in 3 subsequent studies. Cross validation is considered an essential component of model development, yet rarely conducted.

British Study

CFA of the 8 factor model in the British sample produced a similarly fitting model $\chi^2 = 1588.11$, $df=772$, RMSEA = 0.045, GFI= 0.87, AGFI=0.84, NFI = 0.83. However, formal testing of the equivalence of the two models using multiple sample analysis (Joreskog & Sorbom, 1993) failed. Errors in the output suggested that the model was misspecified.

To facilitate the comparison of the British and Australian data one-factor congeneric modelling of the scales was undertaken. Six of the eight factors were found invariant. Two of the factors were considered to consist of two factors each.

To examine the consistency with the original model derived on the Australian sample, it was re-examined using ten factors. The ten factor model using same 42 items produced a slightly

better fitting model ($\chi^2 = 2015.64$, $df = 763$ $p < 0.001$, RMSEA = 0.045, GFI 0.89, AGFI = 0.88, NFI 0.88) than the original 8 factor model.

New Zealand Study

Examination of the data from New Zealand on the original eight factor model produced a fit

similar to the original Australian 8-factor model ($\chi^2 = 1576.58$ $df = 770$ $p < 0.001$, RMSEA =

0.045 GFI = 0.87 AGFI 0.85 NFI = 0.84. Examination of the 10 factor model, ($\chi^2 = 1718.15$ $df = 763$ $p < 0.001$, RMSEA = 0.049 GFI = 0.87 AGFI 0.84 NFI = 0.82) produced a slightly worse fitting overall model. Thus, the ten-factor model in the NZ sample produced a marginal fit due to the RMSEA of 0.049. One factor congeneric modelling of each of the ten factors however, indicated the construct validity of each of the factors was good to excellent. Although the ten-factor model was not as good as the eight-factor model, the ten factors were all valid.

The ten factors were named (highest loading item with factor loadings included in brackets):

1. *School Leadership, Climate, Decision-Making* (item with the highest loading 'Satisfaction with Leadership in your school', .86);
2. *Promotion Procedures and Opportunities* (' ... current criteria for promotion ', .83);
3. *School Infrastructure* (' ... your school's material resources', .67);
4. *School Reputation* (' .. pupil behaviour in your school', .72);
5. *Status and Image of Teachers* (' ... status of teachers in society', .83);
6. *Student Achievement* (' ... your capacity to influence pupil achievement', .78);
7. *Pastoral Care* (' ... your capacity to change student behaviour', .62);
8. *Workload* (' ... your current workload overall', .86);
9. *Change and Change Management* (' degree of support to implement change', .71);
10. *Professional Self-growth* (' ... your acquisition/development of professional skills', .91).

United States of America Study

Examination of the 10-factor model in the US sample failed to produce a fit ($\chi^2 = 2383.76$ $df = 763$ $p < 0.001$, RMSEA = 0.059, GFI = 0.85, AGFI 0.82, NFI = 0.79). There was no 'simple' modification providing a better fitting model than the originally tested model. Testing the original 8-factor model produced an even worse fit. Further, one-factor congeneric modelling failed to confirm the 10 factors. Thus, exploratory procedures were implemented to gain an understanding of the data from US teachers.

Following similar procedures as previously used, 42 items were found to produce 16 factors. These items overlapped somewhat with the original 42 used in the modelling of the Australian, New Zealand and British data, but also included some different items. The 16 factors produced an acceptable model on a number of the goodness of fit criteria, ($\chi^2 = 1543.95$, $df = 680$, $p < 0.001$, $RMSEA = 0.045$, $GFI = 0.90$, $AGFI = 0.86$, $NFI = 0.91$). The 16 factors produced from the US data were very similar to the originally hypothesised 16 factors (Dinham, 1992).

The sixteen factors were named (highest loading item with factor loadings included in brackets):

1. *Student Welfare* (item with the highest loading 'Satisfaction with support structures for students with special needs in your school', .99);
2. *Teacher Welfare* (' ... support structures for teachers in your school', .96);
3. *Teachers' Associations* (' ... the way teacher unions work for the betterment of education', .98);
4. *Extra Curricula* (' ... your involvement in extracurricular activities', .95);
5. *Community Involvement* (' ...the degree of community involvement in your school', .88);
6. *Student Attitudes and Behaviour* (' ... pupil behaviour in your school', .90);
7. *Collegiality* (' ... your dealings with teachers in your school', .84);
8. *Inservice* (' the range of professional inservice courses offered to teachers', .82);
9. *Professional Self-growth* (' ... your mastery of teaching content', .82).
10. *Educational Change* (' the amount of educational change in recent years', .81)
11. *School Infrastructure* (' ... your school's financial resources', .90)
12. *Professional Efficacy* (' ... your capacity to change student attitudes', .89)
13. *Recognition* (' ... the amount of recognition you receive for your efforts from people in your school', .82)
14. *Student and Community Interaction* (' ... your dealings with parents', .87)
15. *Empowerment* (' ... opportunity for involvement in school decision making', .81)
16. *Workload* (' ... your current workload overall', .81)

Discussion

Since their development, the satisfaction scales have been used to measure and explore teacher and executive satisfaction in each of the four countries from which the original data were collected. The scales have yielded interesting and important information about how teachers conceptualise their occupational world and which aspects of teaching and its context satisfy and dissatisfy them.

In each sample, teachers and school executive recorded greatest satisfaction with what could be termed the 'core business of teaching', i.e., matters pertaining to student achievement and their own professional efficacy and development. There was more ambivalence with 'school based factors', such as school communication and decision making, while overall, there was least satisfaction/greatest dissatisfaction with matters more extrinsic to schools such as the status of teachers and imposed educational change, the outer 'third domain' of teacher career satisfaction (see Dinham & Scott, 1998a, 1998b).

However, educational and social context seems of crucial importance in understanding how teachers construct their conceptual models of the world of teaching. Teachers in the USA sample recorded higher comparable satisfaction with aspects of teaching than teachers in

the other three countries. As a result, because they do not appear to recognise or perceive such a hostile 'third domain' (with poor perceived teacher status, media criticism, high level of imposed educational change) as do teachers in the other three countries, USA teachers appear have a more 'fine tuned', focussed view of their world or work, hence the greater delineation of the role of teaching inherent in the 16 factor model derived from the US data.

However, in the English and Australian samples, and to a lesser extent, New Zealand, teachers recorded lower satisfaction overall, particularly with matters outside their control grounded in the wider sphere of society, and it was these extrinsic factors that appeared to 'hold their attention' and act to erode their satisfaction with both 'core business' and school based factors. Thus, in England, in particular, where criticism of teachers and schools and external pressures are arguably greatest, teachers appear to define their world along simpler, harder lines. In short, it appears harder to keep one's 'eye on the ball' when looking over one's shoulder. American teachers, on the other hand, seem to have more opportunity to focus their attention on their immediate tasks.

Thus, an interesting hypothesis thrown up by this work is that an increase in pressure for educational change and societal criticism of teachers can see the outer third domain of teacher satisfaction/dissatisfaction grow in importance and influence, while the intrinsic and school based aspects of teachers' work recede in terms of career satisfaction generated.

The Teacher 2000 Project is on-going and it is hoped that matters raised in the discussion above can be more fully explored in the future.

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