

**Regulation, De-regulation and Re-regulation:  
The Scope of Employment Relations in the 21st century**

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# CONTENTS

## Volume 2

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PREFACE	iii
LIST OF CONTRIBUTORS	viii
Union Effect on the Externalisation of Employment Relations <i>Byoung-Hoon Lee and Dongbae Kim</i>	428
Empowerment Within Boundaries: A Case Study From The Healthcare Industry <i>Priscilla Leece</i>	443
The Social Contract and Dispute Resolution: The Transformation of the Social Contract in the U.S. Workplace and the Emergence of New Strategies of Dispute Resolution <i>David B. Lipsky and Ronald L. Seeber</i>	452
Checking Out Flexible Working: A Comparative Study of UK and Australian Grocery Retailing <i>Samantha Lynch and Robin Price</i>	473
Gendered Access to Employee Participation: The Impact of Part-Time Employment in Australian Workplaces <i>Raymond Markey and Ann Hodgkinson</i>	486
Rail Privatisation in the UK : Back to the Future? <i>Hamish Mathieson and Andrew Pendleton</i>	499
Regulatory Change: Some Implications for Australian Aviation <i>Jim Mitchell</i>	510
Labour Hire and Casualisation: An Industry Case Study <i>Terri Mylett</i>	522
Professional Malaise: A New Zealand Condition? <i>Warren Nuttall and Romuald Rudzki</i>	535
Dismissing a Departmental Secretary: An Overt Exercise of Power in Public Employment <i>Len Pullin and Ali Haidar</i>	548
Relations Between Fractions of Management in an NHS Trust <i>Michael Pye and Mary Broomfield</i>	561

- Males and Early Childhood Care and Education:  
Student, Staff and Parent Survey Evidence  
*Andrea Quinn, Michael Lyons and Jennifer Sumsion* 575
- Employment Protection Systems: Reassessing Statutory Provisions and Labour  
Market Flexibility  
*Mark John Roberts and Alex Norman Roberts* 597
- The Use of Computer-Assisted Qualitative Data Analysis Software in Employment  
Relations Research: A Case Study of the Australian and New Zealand  
Telecommunications Sectors  
*Peter Ross* 611
- Organising Front-Line Service Workers: Evidence from Four Union Campaigns  
*Melanie Simms* 622
- The Role of Employer Associations: A Survey of Members in the Australian Printing  
Industry  
*Keri Spooner* 635
- Improving People Management Strategies in Chinese Hospitals: A Case Study in the  
Sichuan Province  
*Pauline Stanton and Pei Likun and Liu Yi* 643
- Sharing and Caring: The Dilemma of Public and Private Organisational Effectiveness  
*Peter Townsend and Sugumar Mariappanadar* 656
- Is Affirmative Action Capable of Instigating Positive Employment Outcomes for  
Women Employed in Female Dominated Industries?  
*Rosalind Tregurtha* 667
- Is the Democratic Party the Labor Party of the U.S.? A Commentary  
*Leo Troy* 683
- Employment Protection in Ireland  
*Joe Wallace and Michelle O'Sullivan* 693
- The Impact of the Minimum Wage on the Hairdressing Sector: A Special Case?  
*Geoff White, Janet Druker and Celia Stanworth* 703
- Organising Strategies in the Informal Economy  
*Mark Wilding* 719
- Trust, Intrafirm, and Supplier Relations  
*Geoffrey Wood and Chris Brewster* 730

## **Males and Early Childhood Care and Education: Student, Staff and Parent Survey Evidence**

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*The early childhood care and education workforce is overwhelmingly female dominated. Males who choose a career in education have a greater attraction to working with older (secondary and primary) over younger (early childhood education) children. We examine reasons for this phenomenon by analysing survey responses of recent education degree graduates in Australia. We also report analysis of purpose designed surveys of first-year university students, staff employed in early childhood services, and parents of children attending children's services centres in NSW. Our preliminary results failed to detect stereotypical gender attitudes as barriers to increased male participation in the workforce. While this is an encouraging result in terms of recruitment, the characteristics of the industry mean that the problem could shift to one of retention of male staff, given the resilience of the 'male breadwinner' concept in society.*

As part of a study examining reasons for the gender imbalance of the children's services workforce, conducted on behalf the New South Wales (NSW) Department of Community Services, at the 2002 IERA conference we reviewed the literature analysing the apparent reluctance of males to seek employment in the early childhood care and education 'industry' (Lyons and Harty, 2002). We concluded that a number of labour market, economic and social influences make it less likely that males, as opposed to females, would choose a career in children's services (Figures 1 and 2). This paper continues the discussion of those reasons by presenting an analysis of surveys by student, recent graduate, staff and parent respondents. The analysis of the 2001 graduate destination survey was conducted to either confirm or dispute our 2002 conclusions. The student, staff and parents surveys form part of our ongoing research project, investigating the extent of, and reasons for, female dominance of the children's services workforce. We report only preliminary analysis of this data; more in depth analysis and discussion of the survey data will be reported when the qualitative phase of the project is completed. However, the results reported here suggest there exist few attitudinal impediments to increasing the numbers of male children's services workers. The possible obstacles discovered relate more to the structure of the children's services labour market and not direct gender related factors.

### **Graduate Destination Survey 2002**

In order to further examine this issue, we conducted an analysis of the responses from the replies to the 2002 Australian Graduate Destination Survey conducted by the Graduate Careers Council of Australia Limited (GCCA) (see GCCA, 2002). We analysed the replies from all respondents who had recently completed study for an undergraduate (bachelor's) degree in the field of education. The respondents had completed courses qualifying for degrees in early childhood education, primary education and secondary education. In total, 1104 respondents' replies were analysed, consisting of 350 early childhood education graduates, 379 primary education graduates and 375 secondary education graduates. The gender composition of the total education graduate pool was 209 males and 895 females. The female domination of recent education degree graduates is consistent with our 2002 discussion. The procedure adopted was to recode and collapse the responses so that cross-tabulations could be generated in order to detect difference among the 'level' of the graduate responses and gender difference between the graduates.

### ***Education Degree Differences***

Analysis of the responses by education degree type detected some statistically significant (at the 5% level) differences. One notable difference was that primary education graduates were younger than the other two groups, were less likely to be employed, and if employed were less likely to be employment on a permanent basis.

More early childhood education graduates were found to have studied for their degree on a part-time basis, and to have studied via external (distance) mode. They also had more advanced standing (credit) for prior study. They were found to have been undertaking more paid employment in their last year of study relative to the other types of education graduates, and this work was skewed towards full-time employment. Consistent with our 2002 conclusions, over half of the early childhood education graduates commenced their 'graduate' year employment prior to completion of their studies. They were found to have been supplied with more financial assistance from their employer in the final year of study. Importantly, they were also found to be more likely to still be employed in the same job after graduation. These findings suggest that early childhood education students have characteristics separate from other education students.

The early childhood education graduates had the lowest incidences of graduate employment in 'education', as defined by the Australian Bureau of Statistics (ABS). Yet, as expected they were more likely to be employed in early childhood education and/or children's services. However, one-quarter of the early childhood education graduates were employed in primary education, perhaps reflecting the greater 'portability' of early childhood education qualifications in Australia (education and children's services) or disincentives to teach very young children. In contrast, the primary education students were found to be engaged in more post-graduation study, and thus had the lowest levels of employment. For those that were employed, it was more likely that this was their first full-time job.

Consistent with our 2002 discussion, more males were found to be secondary education graduates (37%), in contrast to the primary (12%) or early childhood education (6%) graduates. Perhaps reflecting the greater concentration of males in the secondary education graduate group, their 'graduate' year income was higher than the others. Overall, secondary

education graduates were found to be older than the other two groups. In addition, they were found to have more tertiary pre-education studies qualifications, with over half of the secondary education graduates having a prior university qualification.

#### ***Gender Differences among Education Graduates***

It is possible that the statistically significant differences detected among the three kinds of education graduates could be an indirect influence of the gender composition of the degree types, given that males are attracted to teaching older children (secondary and primary) relative to early childhood education. To assess this, we generated further cross-tabulations with gender (sex) being the dependent variable. And here, some gender influences were identified.

Somewhat unexpectedly, more males were found to have been full-time students and studied via traditional (internal) mode. The location of the respondents' 'graduate' year of employment detected some interesting results. Over half the males were employed in secondary education, despite the fact that only one-third of the males studied for a secondary education degree. Also surprising was that more males were employed in 'education' relative to the females (76% and 63% respectively). However, more females were found to have commenced their 'graduate' year of employment prior to completion of their studies (26% and 17% respectively). Arguably, this outcome reflects the fact that males tended to study full-time relative to the females. Perhaps the most notable gender difference detected was that concerning 'graduate' year pay levels. Almost two-thirds of the males reported an annual income of more than \$31,000, whereas just under half of the females (43%) reported an annual income of \$20,000 or less. This result is again consistent with the 2002 discussion that males on average received higher incomes than females even when they have 'identical' characteristics. The finding that, relative to the males, double the number of female graduates were engaged in their first full-time job (18% and 31% respectively) is consistent with our 2002 discussion. This result is accounted for by the finding that males tended to be older than females, with just under half of the males and only one-quarter of females being over thirty years of age (43% and 25% respectively), and thus would have more labour market experience.

#### ***Gender Differences between Young Children Teacher Graduates***

The significant gender-related results generated with the analysis of three groups of education graduates may have been heavily influenced by the higher percentage of males found with the secondary education group, given that two-thirds of the males were secondary education degree graduates (140 out of 209). Notwithstanding the greater attraction of later years of education to males, we reported in our 2002 discussion evidence of an important gender difference even between early childhood education and primary education students (Lyons and Harty, 2002:471). We showed that during the 1990s about 20 per cent of primary education degree enrolments in Australia (and NSW) were male, while only about three per cent of the early childhood education degree enrolments were male. The GCCA data is consistent with this evidence: 23 per cent of the primary education graduates were male and only six per cent of the early childhood education graduates were male (resulting in two-thirds of the male early years teacher graduates having completed a primary education degree). Therefore, gender-related differences between the two early years education graduates might be evident. To explore this assumption, we conducted additional cross-

tabulations with, again, gender being the dependent variable, but with this procedure we eliminated the secondary education graduate responses from the analysis.

The results from this procedure were unexpected. We detected few significant gender differences between the early childhood education and primary education graduates. Again, more females were found to have studied via external mode, whereas more males were found to have been financially supported by their employer in the final year of study relative to females (24% and 4% respectively). Once more, males were found to be older than the female young children teacher graduates, and males had more tertiary pre-education studies qualifications (35% and 22% respectively). This result appears to be influenced by the ages of the male primary education graduates, as the average age of both the male and female early childhood education graduates was about twenty-eight years.

Perhaps the most interesting result was the difference in the location of employment in the 'graduate' year: two-thirds of males were employed in primary education (and 12% in secondary education) and only two of the sixty-nine males (3%) were employed in either early childhood education or children's services. In contrast, only 44 per cent of females were employed in primary education, while 22 per cent were employed in either early childhood education or children's services. This finding would seem to support the early years male career model found in Figure 2. In light of the increased attraction of primary education degrees to males relative to early childhood education, the few significant gender-related differences identified between the two groups of young children teacher graduates was unanticipated.

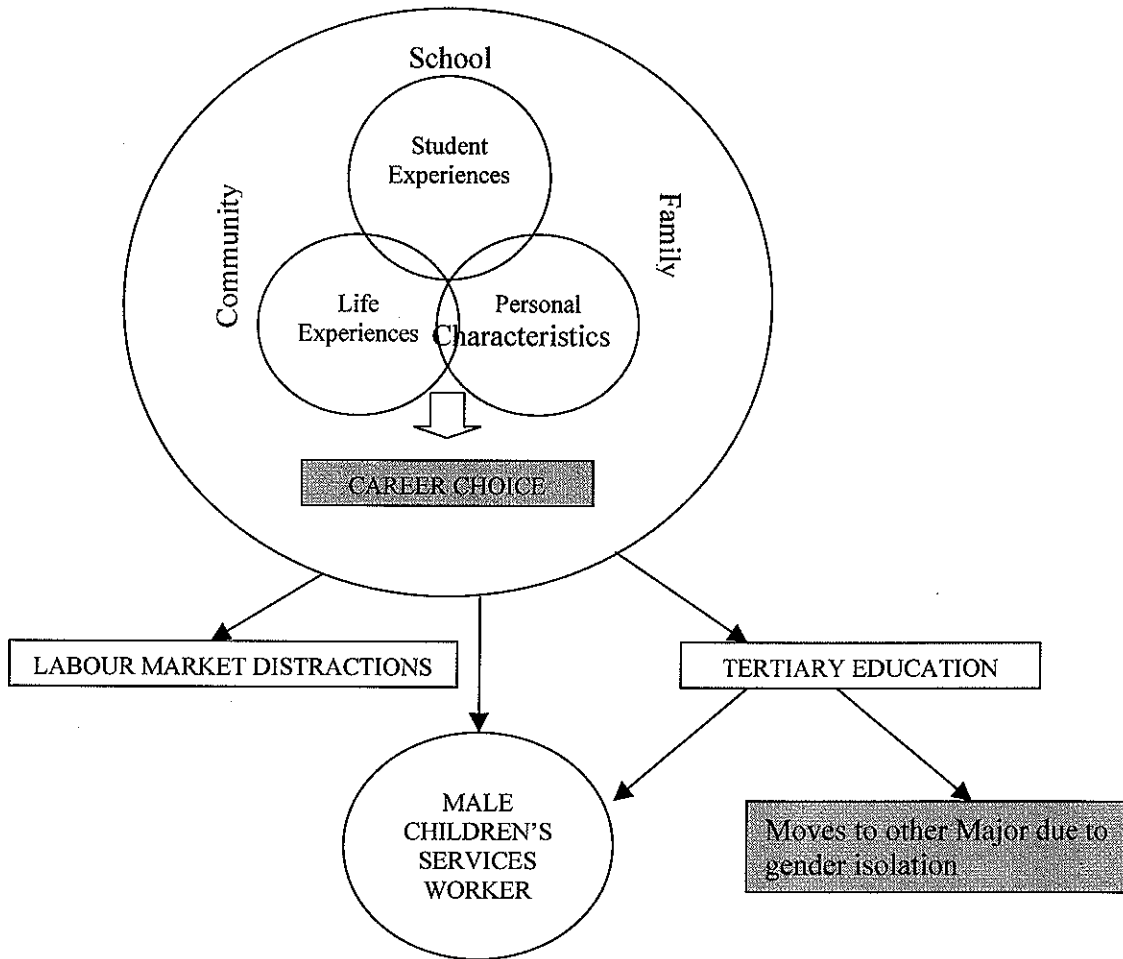
#### ***Differences Between Young Children Teacher Graduates***

The relatively few gender differences between the two groups of early years teacher graduates could potentially be explained by separate 'pathologies' influencing their respective behaviour. In other words, the attitudes, values and the like of the two groups of graduates are unlike and distinct, which transcends gender influences. To assess this proposition, we conducted further cross-tabulations with the degree of study being the dependent variable. With this procedure, numerous significant differences were detected. Primary education graduates had slightly more advanced standing for their studies (93% : 85%), and tended to continue study even during their 'graduate' year (22% : 16%). More early childhood education graduates had studied part-time (49% : 18%), and more had studied via external mode (34% : 12%). An important finding was that more early childhood education graduates had engaged in paid employment in the last year of their degree (80% : 69%), with a strong bias towards full-time employment (27% : 7%). Further, they also attracted more employer financial support for their studies, though the proportions for each group in this category were small (7% : 3%). A notable finding in this regard was that the early childhood education graduates tended to remain employed in the same job, even after the completion of their studies (36% : 22%). Indeed, a sizable proportion of the early childhood education group commenced work with their 'graduate' employer before the completion of their degree (41% : 15%). In addition, they also had a greater tendency to work something close to traditional full-time hours (57% : 43%), and to have a permanent job (57% : 45%). The seemingly greater attachment of the early childhood education graduates to the workforce probably reflects the structure of the children's services labour market and the division of labour found



in daycare centres: many unqualified and vocationally trained staff undertake tertiary study to advance into senior positions, and to improve their pay levels.

**Figure 1: Early Career Path for a Male Children’s Services Worker/Early Childhood Teacher**



The differences between the location of ‘graduate’ employment for each group is also noteworthy: less than half of the early childhood education graduates were employed in ‘education’ as defined by the ABS (47% : 64%). This finding can, conceivably, be explained by the fact that many children’s services’ establishments are not included in the education classification. For instance, while about one-quarter of the early childhood education graduates were each employed in either early childhood education or primary education workplaces, yet their employment in children’s services significantly outweighed that of the primary education graduates (17% : 1%). This result is not unexpected given that more early childhood education graduates were found to have a prior ‘vocational’ qualification, the diploma in children’s service/child studies for example, relative to the primary education graduates (15% : 2%).

The early childhood education graduates appear to have had more labour market experience than their primary education counterparts, as only one-quarter reported being in their first full-time job in contrast to one-third of the primary education graduates. Potentially, this is explained by the relative older age of the early childhood education graduates. The failure to find a difference in 'graduate' year income levels of the two groups is noteworthy, as neither was found to be advantaged by the pay rates they attracted. Thus, the stronger attraction of males to primary education studies relative to early childhood education, as we discussed in 2002, does not appear to be motivated by pecuniary rewards (or if they, are they not forthcoming).

### **Summary**

The analysis of the 2002 GCCA education graduate survey responses confirms the findings of recent studies which examined attitudinal differences between male and female early childhood education students and primary education students. Skelton (2003) found no major gender related differences within early childhood education students. The males and females in her sample held almost uniform views regarding the role of male early childhood education teachers, with the females displaying slightly more favourable attitudes to male participation than the male students. The more cautious views of the males seems to have been generated from the possible suspicion which the community (family, peer group, and the children's parents) might hold concerning the motives of males seeking employment within early years teaching. The main finding of her study that the major differences exist between education degree types (early childhood education and primary education students) is consistent with our findings reported above. These findings are also consistent with a similar study conducted by Carrington (2002). Arguably, the relative lack of gender differences between early childhood education students and graduates is a reflection of the (slowly) changing attitudes regarding the role of males held by younger people (Egan, 1996).

### **The NSW Surveys**

To further explore the issue of the reluctance of males to be employed in early childhood education and/or children's services, we conducted surveys of university students enrolled in early years teaching degrees, staff employed in daycare centres, and parents whose pre-school age children attend daycare centres. The sample for each survey was located in New South Wales. The objective of the student survey was to examine gender-related influences and attitudinal differences between early childhood education and primary education students. The objective of the staff survey was to examine attitudinal and structural barriers to the employment and retention of male early childhood care and education staff. The two surveys were designed so that comparative analysis could be generated in order to detect if familiarity with the children's services workforce, 'real world' experience in other words, changes the attitudes, values and beliefs of staff. The objective of the parent survey was to identify potential opposition by the parents to the employment of male staff, which would then influence the recruitment and employment decisions of children's services management.

Given the objectives of our surveys, there was no single developed measure that could be acknowledged as useful for the present study. However, a number of purpose-designed surveys were available in related research, all of which had neglected to report scale reliabilities. Only one had established a statistically derived factor structure, but also failed to report scale reliabilities for each. For some studies, established instruments (for example, the

BEM Sex Role Inventory) had been used, but were less clearly linked to our current research aims. In addition, these did not add to the constructs already established, and would have been a costly adjunct if included. As a result, all survey items used for the present research were selected from purpose-designed surveys that did not appear to be validated (Barnard, et al, 2000; Biraimah, 1988; Daniel and Ferrell, 1991; Kelly, 1989; Lokan and Fleming, 1994; Papanastasiou, 1996; Snyder, Doerr and Pastor, 1995; Wodlinger, 1986), or were constructed from three studies that identified substantively related constructs (Cortis, 2000; Powderley and Westerlake, 1998; Seifert, 1974). While the situation was problematic in terms of empirical rigour, it was also deemed amenable to post hoc investigation via data reduction techniques.

Following from the above, survey items were manually assigned to factors, or subject matter domains, which were developed from the item content and/or from the constructs discussed in each of the source studies. In most cases, individual items were either related or conceptually distinct, and were thus grouped according to subject matter. Each item was phrased to address the intended audience (staff or student), and presented on a five-point Likert scale where a rating of '1' indicated 'Strongly Disagree' and '5' indicated 'Strongly Agree'. No items were subject to reverse scoring. From the final list, six separate subject matter domains were constructed from the original survey instruments: 1) person-level issues, 2) motivation, 3) role issues, 4) extrinsic job factors, 5) training issues, and 6) other. Construction of the parent survey co-occurred alongside those for staff and students, with the demographic and attitudinal questions tailored to meet the objective of the survey. All three surveys were conducted in the period between late 2002 and early 2003.

#### *Student Survey*

The student survey questionnaire was pilot tested in mid-2002 on a group of undergraduate students in Brisbane enrolled in degree courses relevant for employment in children's services. Amendments were made to the initial survey design as a consequence of the responses. These responses have not been included in any further analysis.

The student population surveyed consisted of those enrolled in the first year of a degree relevant for employment in primary education, early childhood education or children's services, from four universities in NSW. Completed replies came from 114 students, with twenty-eight males and eighty-six females. The majority of students surveyed were studying full-time (75%). Not surprisingly, the highest level of education previously achieved by student participants was high school (64%). About a quarter had a prior vocational qualification, with half of those being in children's service (14%) and the rest (12%) in other fields. Consistent with GCCA data, about three-quarters were currently employed: most being employed on a casual basis (41%), 12 per cent full-time, 18 per cent part-time, and 28 per cent were not employed. Despite these patterns of employment, almost half the student group (48%) reported prior experience in full-time employment.

#### *Staff Survey*

The staff population surveyed consisted of those employed in forty-seven pre-schools or daycare centres in NSW. Replies came from 107 staff: four males and 103 females. Of the staff group, 80 per cent were in full-time employment, 16 per cent in part-time employment, two per cent were casual employees, and 19 per cent had never worked full-time previously.

Given the children's services regulations operating in NSW, it was not unexpected to find that only 10 per cent of the respondents had no post-school qualification. Forty one per cent reported having vocational qualifications in children's services (diploma or certificate – 32% and 9% respectively), 19 per cent reported having degrees in early childhood education, and only four per cent had either completed or commenced a general education degree. The remainder reported having degrees (7%) or vocational qualifications (15%) in other fields of study (4% did not respond to this question). Consistent with the GCCA data discussed earlier, only 16 per cent reported that they were undertaking study with the vast majority of the study in early childhood education and enrolled part-time.

### ***Parent Survey***

The parent population surveyed came mostly from the same centres targeted for the staff survey, with additional centres included in order to increase the cultural and linguistic diversity of the respondents. Of this group, 94 per cent were primary caregivers and reported having the greatest influence over child-care decisions. Most (51%) had one school-age child at home, a third had two school-age children, and six per cent reported having three or more school age children. The majority of respondents were in paid employment, with 16 per cent of parents in full-time work, 34 per cent employed part-time, 12 per cent employed on a casual basis, and (surprisingly) 37 per cent were not engaged in paid employment. The patterns of employment of the parent respondents is potentially important, as this seems to influence the decision to choose one children's services centre over others (see Table 1). Therefore, it may also influence attitudes and beliefs concerning the role of males in children's services. In the households of the parent respondents, 48 per cent reported one person employed in the family unit, 47 per cent indicated two people employed, and only four per cent reported no employed person within the household. Significantly, 80 per cent of the sample indicated they were not the primary income-earner, reinforcing the strength of the 'male breadwinner' concept in society. The cultural diversity of the parents was considerable, with 45 per cent reported having one of their own parents born outside of Australia. The linguistic diversity of the parents was also noteworthy with 13 per cent indicating they speak a language other than English in the family home. This characteristic of the parent respondents is consistent with the linguistic diversity of families using children's services in Australia (ABS, 1999: 14). Thus, with most of the respondents being secondary income-earners, the likelihood that the service quality or reputation of the centre would be the dominant decision-making consideration regarding child-care arrangements, over cost or convenience, is increased (see Table 1). This conjecture is supported by the survey evidence, as more respondents indicated that centre quality was more influential than location, cost or hours of operation.

The potential benefits of increased male participation in the children's services workforce appear to have influenced the attitude of the parents about male workers. For example, the most frequently cited reason for enrolling at particular centres was the capacity of staff to act as 'role models' for their children (27%). In light of the very small numbers of males currently employed in the children's services workforce, it was surprising to find that 40 per cent of parents had at some time sent their children to a centre which employed a male, and a further 19 per cent reported some knowledge of males working in the industry though their own children had no personal experience of male staff. The high profile of males in children's services, as reported by the respondents, despite their very small numbers is arguably due to the 'novelty' value of male staff.

**Table 1: Importance of EC Centre Quality to Parents by Labour Force Status, Australia 1999 (%)**

	<i>Both Parents working full-time</i>	<i>Both Parents working, one or both part- time</i>	<i>One parent working only</i>	<i>Other</i>	<i>Total</i>
<i>Long day care</i>	39.4	49.4	55.0	40.9	-
<i>- % of parents using the centre</i>	21.5	40.1	24.3	14.1	100.0
<i>Pre-school</i>	29.6	33.0	41.6	18.3	
<i>- % of parents using the centre</i>	8.9	34.1	46.0	11.0	100.0

(Source: ABS 1999, Cat. 4402.0 p.19)

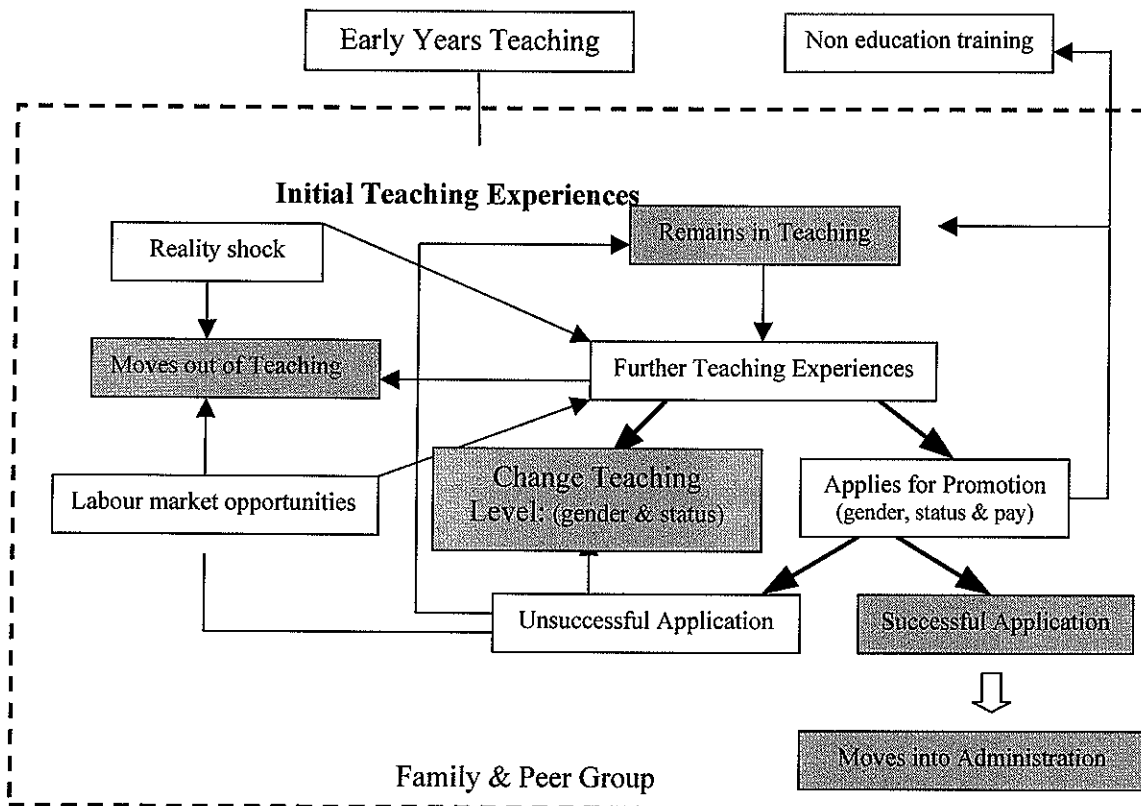
### Survey Analysis

#### *Comparisons between Students and Staff*

While it was not all that surprising to find that 11 per cent of the students reported being the primary income-earner in their household (as 12% were employed full-time), it was unexpected to find that only 39 per cent of the staff were primary income-earners, given that 80 per cent worked full-time. This result could be due to the relative unimportance of economic factors shaping the labour market choices of children's services staff. Other survey responses seem to confirm this understanding: the most common reason cited by both staff and students regarding career choice was interest (95% and 90% respectively). The almost negligible responses to the ease of employment option (2% and 4% respectively) casts doubt over suggestions that the female dominance of children's service employment is due to a 'reserve army of labour' influence. The apparent disregard for material rewards (such as pay) as a motivating factor shaping the employment choices of current and future children's services staff was confirmed by the responses concerning the assessment of career progression. Clearly, intrinsic factors are the overwhelming influence, for both groups judged career progress according to personal satisfaction (48% of staff and 55% of students), achievement (22% and 22% respectively), and value to community (8% and 11% respectively). It is significant to note that neither the pay nor job status options ranked highly with the students or staff.

Consistent with our 'reality shock' thesis (see Figure 2), the majority of both staff and students reported being employed in their current jobs for less than two years. However, both groups reported considerable experience in either children's services (65%) or early childhood education (40%) employment. For 5 per cent of the students, this experience had been as a 'qualified' worker in a centre, whereas 25 per cent of the staff had previously performed this role. This evidence implies that females are more successful in negotiating their employment through this reality shock than males because of the gender 'typical' nature of the work (Lyons and Harty, 2002:475-76).

Figure 2: Later Career Path for a Male Children’s Services Worker/Early Childhood Teacher



In analysing the respondents’ attitudes, initial scale reliabilities were established via statistical tests for internal consistency (Cronbach’s alpha). After item deletions to improve scale reliability, results varied from low-moderate to strong. Because the tentative scales had been manually derived from survey tools of unknown metrics, exploratory factor analysis was performed to estimate the number of reliable factors, and to confirm or challenge the assumed factor structure, as discussed earlier. This procedure also assessed the presence of outliers, absence of multicollinearity, and factorability of the correlation matrices, and was verified by a Kaiser-Meyer-Olkin value of .64, combined with a significant result ( $p < .0001$ ) for Bartlett’s test of sphericity. The large number of variables (111), coupled with low communalities ( $M = .4156$ ), indicates that Kaiser’s criterion value should, however, be interpreted with caution. Six interpretable factors were nonetheless extracted, with eigenvalues greater than three. Each aligned well to the expected factor structure, with some clarification indicated.

To maximise the variance extracted by orthogonal factors, principal components analysis with varimax rotation was then conducted on 111 items, for the sample of 114 students and 107 staff ( $N = 221$ ). Oblique rotation confirmed the independence of orthogonal factors, and varimax rotation was thus retained. Six factors were extracted, and were well defined by the factor solution. With a cut-off of 0.3 for inclusion of a variable in interpretation of a factor, 28 of the 111 items did not load on any factor. Factor loadings are shown in Appendix A, while the percentage of variance accounted for in the final solution is presented below in Table 2.

**Table 2: Percentage of Variance Accounted for by Each of the Rotated Orthogonal Factors, Staff and Student Surveys**

	<i>Variance Accounted for by Factor</i>					
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>
% of variance	9.252	5.986	5.413	4.426	3.582	3.333
cumulative % of variance	9.252	15.238	20.651	25.077	28.659	31.991

Interpretation and re-labelling of the factors is reported in Table 3; each factor was interpreted from survey item content appearing in Appendix A. While there was obvious overlap between the previously assumed and statistically derived factor structure, the picture was substantially clarified through principal components analysis. Scale reliabilities were checked using the statistically derived factor structure. Internal consistency (Cronbach's alpha) was sound to strong for all scales, with Self-Concept (.904), Extrinsic Motivation (.769), Gender Roles (.825), and Occupational Fit (.746) achieving acceptable results without item deletion. For the Community Acceptance factor, deletion of items 32 and 33 resulted in  $\alpha = .711$ , while the Career Advancement factor was improved by deletion of item 77, achieving  $\alpha = .738$ .

**Table 3: Final Principal Components Solution, Staff and Student Survey Factors**

<i>Factor Label</i>	<i>Attitudes and Values</i>
<i>EC Teacher Self-Concept</i>	relations with students, colleagues, parents self-efficacy decision participation autonomy role identification
<i>Extrinsic Motivation</i>	interpersonal influences (parents/teachers/others) salary expectations advancement expectations occupational status
<i>Gender Roles</i>	negative gender stereotypes more males needed in EC teaching recruitment pathways for males media influences on recruitment
<i>Occupational Fit</i>	perceived natural ability previous experience love of children personality fit
<i>Community Acceptance</i>	perceived isolation of males community perceptions about career motives access to same sex workplace support
<i>Career Advancement</i>	promotional opportunities

Between-group differences were examined according to role status, that is, staff versus students. Mean differences were found for EC Teacher Self-Concept,  $t(219) = 2.503$ ,  $p < .05$ , and indicate that role satisfaction is higher for incumbent staff than that expected by first-year students. In contrast, staff report lower satisfaction with extrinsic job factors, such as pay and conditions, compared to that anticipated by the students,  $t(219) = -7.953$ ,  $p < .000$ . This is

supported by negative factor loadings for items 69 and 70, concerned with future salary and earnings potential (see Appendix A). Results according to gender could not be computed due to substantial differences in group size using this procedure.

**Parent Survey**

Exploratory factor analysis was performed to estimate the number of reliable factors that could be obtained from the parent responses. Absence of outliers or multicollinearity was established, as was factorability of the correlation matrices, and verified by a Kaiser-Meyer-Olkin value of .75, combined with a significant result ( $p < .0001$ ) for Bartlett's test of sphericity. Six factors were extracted with eigenvalues greater than one, all of which could be meaningfully interpreted.

To maximise the variance extracted by orthogonal factors, principal components analysis with varimax rotation was conducted on the twenty-nine parent survey items ( $N = 137$ ). Oblique rotation confirmed the independence of orthogonal factors, and varimax rotation was thus retained. Six factors were extracted, and were well defined by the factor solution with the exception of Factor 6 which included a number of cross-loadings. With a cut-off of 0.3 for inclusion of a variable in factor interpretation, twenty-eight of the twenty-nine survey items were retained. Loadings of variables on factors are shown in Appendix B, while the percentage of variance accounted for in the factor solution is presented below in Table 4.

**Table 4: Percentage of Variance Accounted for by Each of the Rotated Orthogonal Factors, Parent Survey**

	<i>Variance Accounted for by Factor</i>					
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>
% of variance	17.073	8.908	8.104	7.655	7.109	6.897
cumulative % of variance	17.073	25.981	34.084	41.740	48.848	55.745

As for the staff and student surveys, interpretation and re-labelling of the factors followed, and are summarised below in Table 5. Each factor was interpreted from survey item content appearing in Appendix B. Scale reliabilities were computed to assess internal consistency for each scale (Cronbach's alpha). The re-labelled factors and respective reliability coefficients were: Parent Approval of Male EC Workers (.785); Beliefs About Male Participation Rates (.542) with item 16 deleted; Necessity for EC Training (.979); Reward Expectations (.046); Recruitment Focus (.629); Career Decision Influences (.448). Of the factors derived, only two achieved a strong result (Parent Approval of Male EC Workers and Necessity for EC Training), while two others approached acceptability (Beliefs About Male Participation Rates and Recruitment Focus). The remaining two factors, Reward Expectations and Career Decision Influences, failed to demonstrate acceptable internal consistency, and are thus excluded from the summary table below. Differences according to previous experience with male EC workers were not significant, and results according to gender and caregiver status could not be computed due to unequal group sizes using this procedure.



**Table 5: Final Principal Components Solution, Parent Survey Factors**

<i>Factor Label</i>	<i>Attitudes and Values</i>	<i>Reliability</i>
<b>Parent Approval of Male EC Workers</b>	EC teaching not exclusively a female role	.785
	Male influence important for children	
	Gender mix in EC work important for children	
	Both males and females provide quality care	
<b>Beliefs About Male Participation Rates</b>	Males less likely to remain in EC work	.526
	Males more likely to move outside EC work	(low-moderate)
<b>Necessity for EC Training</b>	Both males and females require specialist EC training	.979
<b>Recruitment Focus</b>	Masculine aspects of EC work	.629
	Males as nurturers in EC work	(near acceptable)

### Conclusion

The findings from this study are a positive step in the process of understanding reasons for the gender imbalance of the early childhood care and education workforce. The policy implications are considerable for any recommendations based on this survey evidence would address Skelton's (2003:207) apprehension that current initiatives lack direction because they are not supported by research evidence.

Analysis of the graduate survey found no major gender-related differences among early childhood education graduates. Rather, the behavioural and labour market differences appear to be connected with the education degree type. As a result, the greater attraction of males to primary education, discussed in our 2002 IERA paper, does not bring forth any major benefits for primary education teachers relative to early childhood education, at least in the 'graduate' year. The comparative analysis of our student and staff surveys did not detect any attitudinal barriers to an increase in male participation with the children's services workforce. The factor analysis revealed strong support for more male staff, and a weakening of gender stereotypical views about employment in children's services. However, our analysis did detect one major obstacle to greater male involvement in children's services: the anticipated extrinsic rewards (pay, promotions and the like) of the students do not seem to be matched by the rewards available in children's services employment. To that end, the Australian students in our sample do not appear to have the same concerns over industry pay rates as British students (Carrington, 2002:293). While this phenomenon may be beneficial in attracting additional males into the workforce initially, it may only magnify the reality shock experienced by males in the first few years of their employment and transform the problem from one concerning recruitment to retention.

Perhaps the most positive results from this study are those connected with the attitudes of the parent sample. Child-care costs or centre convenience do not appear to be important factors influencing decisions about child-care arrangements. Instead, the quality of the service was found to be the dominant consideration. Conceivably, this factor is the stimulus for the very positive attitudes of the parents towards greater participation by males in children's services. Again, this is evidence of the degrading of gender stereotypical beliefs. Therefore, the welcoming attitudes of parents should be acted on by the managers of children's services when making employment and human resources decisions.

Appendix A

**EC Staff and Student Survey: Factor Loadings from the Rotated Component Matrix are Grouped by Factor**

Items are presented in numerical order within each factor, with loadings below .3 suppressed.

<i>Item</i>	<i>Survey Question</i>	<i>EC Teacher Self-Concept</i>	<i>Extrinsic Motivation</i>	<i>Gender Roles</i>	<i>Occupational Fit</i>	<i>Community Acceptance</i>	<i>Career Advancement</i>
6	I feel able to set appropriate limits with young children.	.458					
7	Teachers of young children should be willing to discuss teaching problems with colleagues.	.448					
9	I believe I have a talent for teaching young children.	.502			.364		.344
12	After graduation, I expect to develop close friendships in my future workplace.	.484					
13	After graduation, I expect to be able to access useful advice for professional problems.	.461					
14	I feel confident in my ability as a teacher of young children.	.565					
15	I feel able to manage any challenges I may face in my future role as a teacher of young children.	.495					
17	When things go wrong in my future work, I expect there will always be something I can do to get 'back on track'.	.498					
50	After graduation, I expect teaching young children will provide a satisfying level of challenge.	.456			.370		
51	After graduation, I expect to have a positive relationship with the children in my care.	.552					
52	After graduation, I expect to derive a feeling of worthwhile accomplishment from working with young children.	.573					
53	After graduation, I expect to derive self-esteem from working with young children.	.385					
54	My future work with young children will give me a feeling of fulfilment.	.569					
55	After graduation, I expect to have a positive	.572					

<i>Item</i>	<i>Survey Question</i>	<i>EC Teacher Self-Concept</i>	<i>Extrinsic Motivation</i>	<i>Gender Roles</i>	<i>Occupational Fit</i>	<i>Community Acceptance</i>	<i>Career Advancement</i>
	relationship with the parents of children in my care.						
56	My future work with young children will allow me to think for myself.	.453					
57	After graduation, I expect to participate in formulating policy at my future workplace.	.542					
58	After graduation, I expect to be able to choose how I will go about my work with young children.	.505					
59	After graduation, I expect to be free to select the materials I will need to conduct my work.	.523					
60	After graduation, I expect to have satisfying social relationships at my future workplace.	.587					
61	I am able to participate in setting goals at my future workplace.	.684					
62	After graduation, I expect the distribution of resources will be equitable at my future workplace.	.531					
63	After graduation, I expect useful advice for professional problems will be available if needed.	.671					
67	I know what is required of me in my intended occupation.	.599					
73	Balancing work and family responsibilities is important.	.370					
84	Teachers of young children have a lot of autonomy in their jobs.	.317					
107	I have decided what my career objectives are.	.520					.327
108	I have a plan for my career.	.497					.393
18	My decision to become a teacher of young children was influenced by having a male primary school teacher who I perceived as a role model.		.341				
19	My decision to become a teacher of young children was influenced by having a female primary school teacher who I perceived as a role model.		.365				

<i>Item</i>	<i>Survey Question</i>	<i>EC Teacher Self-Concept</i>	<i>Extrinsic Motivation</i>	<i>Gender Roles</i>	<i>Occupational Fit</i>	<i>Community Acceptance</i>	<i>Career Advancement</i>
48	Working with young children is 'natural' for women, and is therefore easier for them.		.349				
68	Current wage levels for teaching young children are adequate to recruit males into the profession.		.642				
69	Future salary expectations influence how long males intend to remain in early childhood teaching.		-.484				
70	Male teachers of young children tend to move to careers outside education due to the potential for greater earnings.		-.448				
74	Teaching young children offers a good salary.		.640				
75	There are good fringe benefits associated with jobs in teaching young children.		.597				
76	Careers in teaching young children offer good working hours and vacation time.		.375				
78	People in other occupations value teachers of young children.		.476				
79	Teachers of young children enjoy high social standing.		.620				
80	The profession of teaching young children provides good opportunities for advancement.		.747				
81	Experience in teaching of young children can easily lead to other careers.		.615				
82	A career in teaching young children provides opportunities for leadership.	.331	.375				
83	A career in teaching young children offers good job security.		.333				
86	Teachers of young children get promoted easily.		.473				
90	Given the opportunity, I would prefer to work with primary school age children.		.447				
106	Student teaching placements are adequate preparation for a career in teaching young children.		.385				
5	I personally would welcome more males in			.769			

<i>Item</i>	<i>Survey Question</i>	<i>EC Teacher Self-Concept</i>	<i>Extrinsic Motivation</i>	<i>Gender Roles</i>	<i>Occupational Fit</i>	<i>Community Acceptance</i>	<i>Career Advancement</i>
	the early childhood teaching profession.						
16	Males are as well suited as females to teaching young children.			.674			
36	Male teachers of young children probably could not 'make it' as teachers of primary or secondary children.			-.326			
41	Male teachers of young children treat children the same way as female teachers.			.400			
44	Males can provide the same quality of care as female teachers of young children.			.738			
45	Male teachers of young children are just as good as females at relating to young children.			.729			
65	It would be beneficial to have more males in the early childhood teaching profession.			.684			
71	More opportunities for young males to work with young children may convince them to become teachers of young children.			.490			
97	Training programs for teachers of young children should promote programs that recruit males into early childhood teaching careers.			.650			
109	Media campaigns would help to recruit more males into teaching young children.			.590			
110	Advertising which appeals to more 'masculine' aspects of teaching young children would help to recruit more males into careers as teachers of young children.			.501			
111	Advertising which appeals to male 'nurturing instincts' would help recruit more males into careers as teachers of young children.			.516			
8	Teaching young children fits well with my personality.	.405			.521		
10	My natural abilities suit teaching young children.	.392			.457		.349
20	My decision to become a teacher of young children was influenced by experience working with young children in another				.381		

<i>Item</i>	<i>Survey Question</i>	<i>EC Teacher Self-Concept</i>	<i>Extrinsic Motivation</i>	<i>Gender Roles</i>	<i>Occupational Fit</i>	<i>Community Acceptance</i>	<i>Career Advancement</i>
	setting.						
22	Teachers of young children should have a love of children.				.568		
23	After graduation, I expect to enjoy early childhood teaching, because I like working with young children.				.599		
24	After graduation, I expect to enjoy early childhood teaching, because it will allow me to experience the love and respect of children.				.622		
26	After graduation, I expect to enjoy early childhood teaching because I love children.				.738		
27	After graduation, I expect to enjoy early childhood teaching, because it will give me a chance to serve as a positive role model for children.	.344			.440		
30	I discovered the profession of teaching young children from earlier work experience or career lessons.				.313		
49	Teaching young children will allow me to use any special talents or abilities I have.	.329			.406		
1	Males may feel isolated as teachers of young children with so few men in the profession.			.366		.483	
2	Males may avoid careers as teachers of young children because of potential accusations of sexual abuse of children.					.548	
3	More males would become teachers of young children if they were assured that other males would be hired.			.362		.551	
4	Males are more competent than females to teach young children.					.333	
31	Knowing that there are few males in the early childhood field makes it more difficult to decide on teaching young children as a career path.			.350		.433	
32	Parents are supportive and accepting of males teaching young children.					-	.416
33	The community as a whole is accepting of					-	

<i>Item</i>	<i>Survey Question</i>	<i>EC Teacher Self-Concept</i>	<i>Extrinsic Motivation</i>	<i>Gender Roles</i>	<i>Occupational Fit</i>	<i>Community Acceptance</i>	<i>Career Advancement</i>
	males teaching young children.					.653	
34	Society still questions the motives of males who choose a career in teaching young children.					.513	
35	Education administrators may try to dissuade males from careers in teaching young children.					.541	
43	It is more difficult for males to obtain employment as teachers of young children than it is for females.					.622	
77	I have additional qualifications that 'over-qualify' me for teaching young children.					.320	
91	I would be willing to relocate myself/family if a job promotion required a move.					.371	
92	After graduation, I definitely want to be promoted after 6 months.					.717	
93	After graduation, I definitely want to be promoted after 1 year.					.760	
94	After graduation, I definitely want to be promoted after 2 years.					.691	

**Appendix B**

**Parent survey: Factor Loadings from the Rotated Component Matrix are Grouped by Factor**

Items are displayed in numerical order within each factor, with loadings below .3 suppressed.

<i>Item</i>	<i>Question</i>	<i>Parent Approval of Male EC Workers</i>	<i>Beliefs About Male Participation Rates</i>	<i>Necessity for EC Training</i>	<i>Reward Expectations</i>	<i>Recruitment Focus</i>	<i>Career Decision Influences</i>
2	The influence of males in EC teaching is important.	.675					
8	Males can provide the same quality of care as female EC teachers.	.603	-.437				
9	Male EC teachers are just as good as females at relating to children.	.612	-.301				.351
12	Working with young children is 'natural' for women, and it is therefore easier for them.	-.515	.379				
20	Training programs for teachers of young children should promote programs that recruit males into early childhood teaching careers.	.657		.324		.350	
25	I would welcome male child-care workers at the centre my child/ren attend.	.730					
26	If I had a choice, I would send my child/ren to a centre that employed male child-care workers.	.753					
27	I believe a male influence can benefit my child/ren at their child-care centre.	.775					
28	The quality of care for my child/ren would improve if more males were employed at my child/ren's centre.	.674					
29	I would send my child/ren to a child-care centre where male child-care workers are employed, even if it meant increased fees.	.685					
4	Male EC teachers will probably move on to other careers.		.680				
6	Males can't behave as they normally do when they are working as EC teachers.		.534				-.348



7	EC teaching may not always be a career of 'first choice' for males.	.653		
21	Females need training to teach young children.	.890		
22	Males need training to teach young children.	.889		
10	Being able to relate to young children requires skill.	.457		
11	Working with young children is not as difficult as other jobs.	-.611		
14	Current wage levels are adequate to recruit males into the profession.	-.609		
19	People in other occupations value teachers of young children.	-.524		
1	Male EC teachers can be substitute role models for 'fatherless' children.	.356		
18	'Sign-on bonuses' would help to recruit more males into the EC teaching profession.	-.308	.546	
23	Advertising which appeals to more 'masculine' aspects of teaching young children would help to recruit more males into careers as teachers of young children.	.773		
24	Advertising which appeals to male 'nurturing instincts' would help recruit more males into careers as teachers of young children.	.790		
3	Male EC teachers don't take jobs that should go to women.	.587		
5	Male EC teachers will probably move on to other careers.	-.335	.668	
13	Males cannot act in the same way as female coworkers in situations such as being alone with children, or displaying affection toward them.	-.325	.359	-.370
15	Future salary expectations influence how long males intend to remain in EC teaching.	.425	.475	.487
17	More opportunities for young males to work with young children may convince them to become teachers of young children.	-.335		.415

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