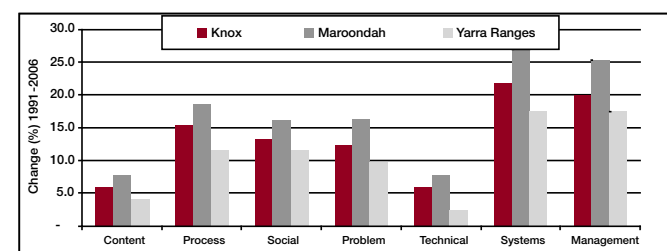


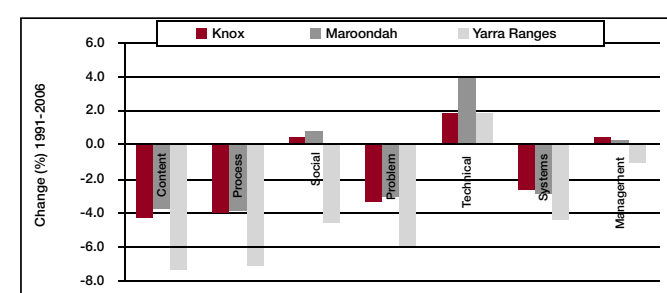
aggregated O\*Net skill categories. Although the growth is weaker than that experienced by residents of Melbourne, OEM women's occupations grew in intensity of content skills; process skills; social skills; resource management skills; problem solving skills; technical skills; systems skills and resource management skills.

**Change in skill area requirements for full-time employment for women, Knox, Maroondah and Shire of Yarra Ranges, 1991-2006.**



For men however the skill intensity of jobs declined in all areas except technical skills. When the data is disaggregated into the three municipalities increases in the skill areas of social skill and management skills are seen alongside the already observed increases in technical skills.

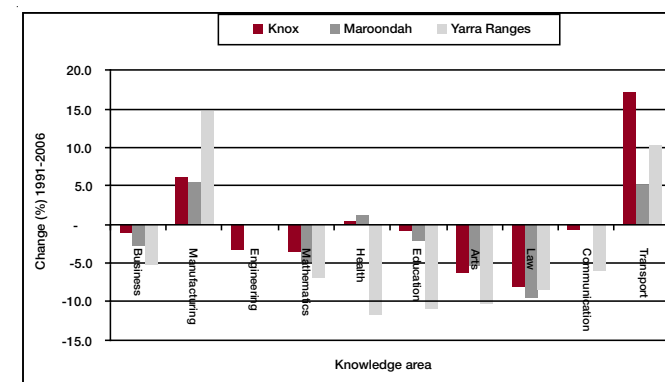
**Change in skill area requirements for full-time employment for men, Knox, Maroondah and Shire of Yarra Ranges, 1991-2006.**



**Knowledge intensity**

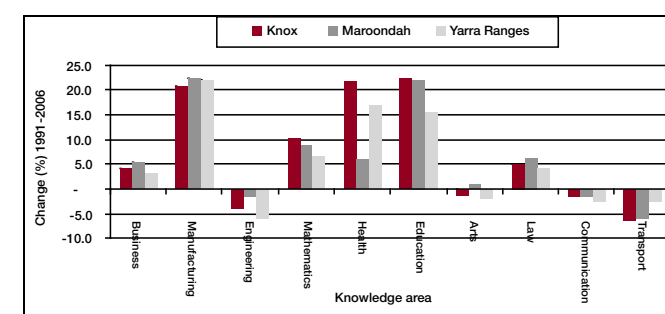
Knowledge is a precondition for the development and application of skills. Thus knowledge intensity is closely correlated to skill intensity but does not equate to skill intensity. In OEM knowledge intensity fell for men employed full time, compared to a small rise in the knowledge intensity of men employed in Melbourne SD for the same period, and increased for women. Inspection of the knowledge intensity indices for men in 2006, indicates that the jobs created for the men who work full-time in the Shire of the Yarra Ranges require lower intensities of knowledge than those created for resident workers in Maroondah and Knox, but most concerning is the fact that the knowledge intensity of these occupations have declined at a faster rate. The performance of OEM in terms of knowledge intensive work, is particularly concerning, not only because it declined, but because this trend contrasts to the experience of Melbourne (SD) and Australia.

**Change in knowledge area requirement for full-time employment for men, Knox, Maroondah and Shire of Yarra Ranges, 1991-2006.**



The OEM experienced declines in the knowledge and skill intensity of jobs, indicating lower skill and knowledge intensity of work in full-time work for men. The graph above shows the changes in the ten knowledge areas for men's full time jobs in each municipality.

**Change in knowledge area requirement for full-time employment for women, Knox, Maroondah and Shire of Yarra Ranges, 1991-2006.**



The graph above shows changes in the knowledge requirements of full time jobs for women. Stronger increases in knowledge intensity of jobs for women may be interpreted as a process of skill-bias towards occupations that require higher levels of skill and knowledge intensity for women, rather than for men. In terms of part-time work, job creation appears to favour occupations that require lower levels of skill and knowledge intensity for both men and women in the OEM, in contrast to the Melbourne (SD).

The full report and a summary report can be found at [www.swin.edu.au/crd](http://www.swin.edu.au/crd)

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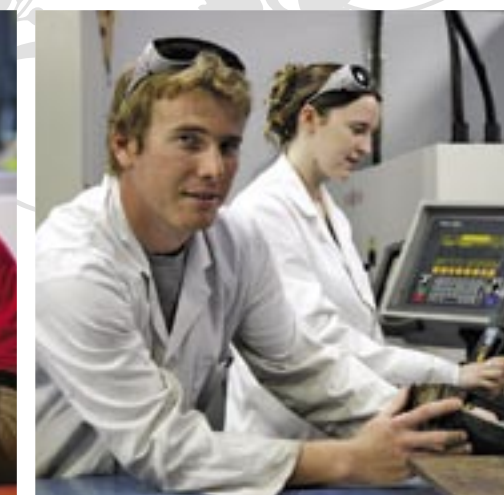
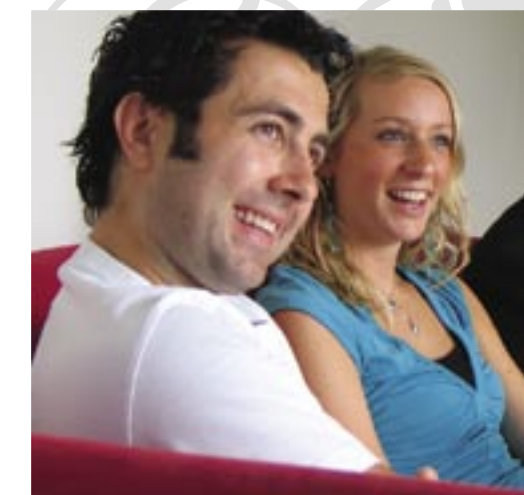


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# Current Skills and Knowledge in the Outer East

## Signposts for the Future Report Overview



**Full Report**

Prepared by:  
Anne Langworthy, Alexis Esposto  
and Charlotte Brunt

**November 2007**

Centre for Regional Development  
Swinburne University of Technology



SWINBURNE  
UNIVERSITY OF  
TECHNOLOGY

## Introduction

Swinburne University and the three municipalities of OEM (Knox, Maroondah and Yarra Ranges) have identified a need to develop a comprehensive skills and employability inventory for the Outer Eastern Region of Melbourne. The need for a skills audit occurs in the context that today's dynamic workplace is characterized by technological advances, new management techniques and other changes which spell shifting requirements for workers, businesses and the community at large. In this changing occupational landscape, informed decision-making requires employees, employers, and policy makers to consider occupational requirements in a new way, which requires a closer focus on skills. Skills are the measurable variables that allow us to link human capital requirements in the workplace, individual capacities, and the education and training programs that can bridge the gap. This overview presents some of the regional skill audit findings very briefly.

## Why focus on skills?

A scan of the literature immediately reveals the prominence of skills as a contemporary social and economic issue, globally and locally. In common with the rest of the developed world, Australia faces the demographic challenges related to an ageing population, the population shift from rural and regional areas to urban areas and the emerging characteristics of Generation Y. Industry demand for a more skill and knowledge intensive workforce capable of adjusting to rapid technological change and competitive pressure in an increasingly deregulated marketplace also throws skills issues into focus which in turn has repercussions for education and training.

A crescendo of research into skills has mounted over the last decade. Evidence of the interest of global organisations in the issue can be found in recent reports and studies commissioned by the United Nations European Union and the Organisation for Economic and Cultural Development (Smith, 2000; OECD, 1996; OECD, 2006). Similarly State and Federal Governments (for example reports by DVC, DET, DEET, DOI, DEWR, DIIRD, & DOTARS) and Industry organisations (for example, Australian Industry Group, Business Council of Australia, Industry and Higher Education Council, Australian Chamber of Commerce, Agri-foods Skills Council, Construction and Property Services Industry, Service Skills Australia) have demonstrated strong interest.

The relevance of the issue to educational institutions particularly those that focus on post compulsory sector including vocational, further and higher education is also amply demonstrated (for example NCVFER; ACER; Centre for Population and Urban Research and the Centre for the Economics of Education and Training, Monash University; and the Centre for Strategic Economic Studies, Victoria University) . Some organisations are even totally focussed on the areas like the

Dusseldorp Skills Forum which seeks to achieve changes needed to enable all Australians to reach their potential through the acquisition of skills and knowledge (for example Long & Burke, 2006; Saulwick & Muller, 2006; Birrell & Rapson, 2006, AIG & DSF, 2007).

Findings from some of these reports and the wider literature highlight the importance of skills and knowledge of the resident workforce for a sustainable future.

## Skill Shortages

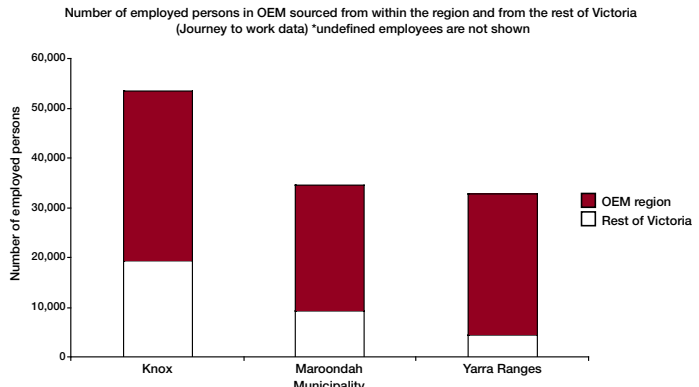
Higher need training areas in automotive, building and construction, business services, metals and engineering transport and storage and wholesale, retail and personal services have been identified by the State Government in response to skill shortages and greater industry training need (OTTE 2007). Skill shortages in the areas of manufacturing, ICT, building and construction, hospitality, automotive, health and community service industries were identified by the Area Consultative Council (then JobsEast) in 2001 and more recently by the Outer East Local Learning and Employment Network which has also included primary industries and water (including horticulture, orchard and berry industries) and tourism and hospitality (an area highlighted for decrease training need by the State Government).

Business interviews and focus groups identified skill shortages in every industry sector represented in the sample and across all levels of skill including: casual hospitality workers; labourers; sales and customer service staff; process and routine workers; warehouse staff; drivers; technicians; fitters; electricians die-setters; joiners; wood machinists; carpenters; boiler makers; diesel mechanics; powder coaters; health care professionals and workers; managers; and administrative staff.

## Employment in Outer Eastern Melbourne

Outer Eastern Melbourne (OEM) has a combined workforce of 187,346 which represents 9.4% of the total Victorian workforce. The employment capacity of the region is 65%; that is, it can provide employment for 121,625 people from a pool of 187,346 resident workers. However, 27.5% (33,406) of regional jobs are performed by people who live outside the region. Taking this into account, 87,975 persons, or less than half (47.0%) of employed OEM residents work within the region, making OEM a significant exporter of employees. The graph below illustrates the proportion of workers from within and without the region for each municipality.

## The Proportion of Regional Workers in each Municipality



Source: ABS JTW data, ABS Census and author calculations

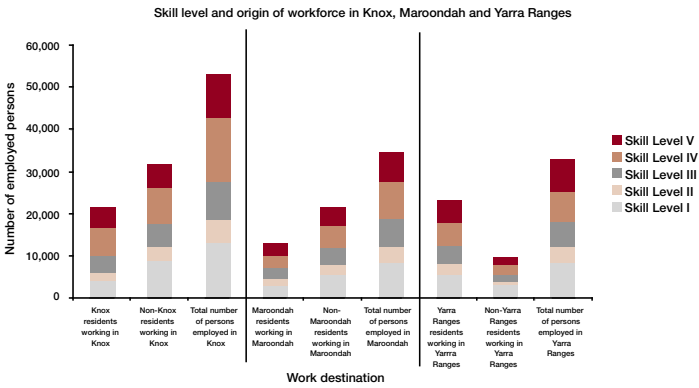
The majority of employed persons living in OEM find employment outside their immediate places of residence (LGA). Approximately 58,414 (31%) of all employed residents live and work in their municipality.

Of a total of 67,382 employed residents in the Shire of Yarra Ranges 56.9 percent (38,330) are employed within OEM. This is the highest proportion of employed residents working within OEM. Of the total number of jobs (employment capacity) in the Shire of Yarra Ranges 70.6 percent of these (23,303) are performed by residents of the Shire. In Maroondah 43.8 percent (21,181) of employed Maroondah residents work within OEM. Of the total number of jobs (employment capacity) in Maroondah, 38.2 percent (13,320) of the total number of jobs are performed by Maroondah residents. The City of Knox has the lowest percentage of employed residents working within OEM (39.4%). Of the total jobs (employment capacity) in Knox, approximately 40.5 percent (21,701) of the total number of jobs are performed by Knox residents. Thus, the highest proportion of employed OEM residents travelling outside the region for work is found in Knox, followed by Maroondah and the Shire of the Yarra Ranges.

## Skill Levels of the Regional Workforce

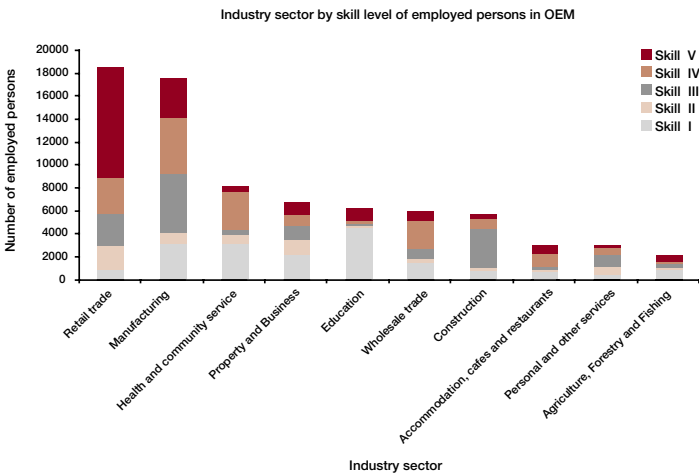
Complementing the employment statistics with information on the skill level of the workforce assists understanding of the skill intensity of various industry sectors, local government areas and the region. The ASCO (2nd ed) classification includes both formal education and/or training as well as previous experience required for entry to an occupation (ABS, 1997b, p. 5). Skill Level I includes manager, administrators and professionals, Skill Level II includes associate professionals, Skill Level III tradespersons, advanced clerical and service workers, Level IV includes intermediate clerical, sales and service workers and intermediate production and transport workers, Level V includes elementary clerical, sales and service workers and labourers.

The graph below shows the skill level and origin of the workforce in Knox, Maroondah and Yarra Ranges in more detail.



## Skill Level Significant Industry Sectors

Significant regional sectors as a destination for employed persons in OEM are: Retail Trade (18559), Manufacturing (17680), Health and Community Services (8275), Property and Business (6886), Education (6426), Wholesale and Trade (6117), Construction (5790) Accommodation, Cafes and Restaurants (3128), Personal and Other Services (3126) and Agriculture, Forestry and Fisheries (2214).



## Employment growth

In both Melbourne SD and OEM employment has grown at a similar rate of almost 30 percent from 1991 to 2006. In line with the findings of research into the changing nature of work, part-time work is increasingly taking a more prominent share of employment and thus experiencing stronger growth than full-time work. The employment experience of men and women differed. Part time work for men in Melbourne grew by almost 74 percent and in Maroondah 78 percent, Yarra Ranges 75 percent and Knox 55 percent between 1991 and 2006. Employment growth for women was stronger than men in Melbourne and the Outer East. Part time employment for women has experience an even more marked increase in the Outer East, outstripping the growth in Melbourne almost fourfold.

### Employment change by region, 1991-2006

Region	Persons employed		change 1991-2006
	1991	2006	
Melbourne (SD)	1,252,430	1,620,539	29.4
Knox (C)	54,683	67,829	24.0
Maroondah (C)	38,427	49,991	30.1
Shire of Yarra Ranges (S)	53,798	68,942	28.1
	<b>Men Full-time</b>		
Melbourne (SD)	597,370	682,211	14.2
Knox (C)	27,096	30,901	14.0
Maroondah (C)	18,441	21,243	15.2
Shire of Yarra Ranges (S)	26,546	29,388	10.7
	<b>Men Part-time</b>		
	<b>1991</b>	<b>2006</b>	
Melbourne (SD)	107,359	186,254	73.5
Knox (C)	4,101	6,344	54.7
Maroondah	3,106	5,539	78.3
Shire of Yarra Ranges (S)	4,457	7,797	74.9
	<b>Women Full-time</b>		
Melbourne (SD)	319,414	387,135	21.2
Knox (C)	12,733	15,062	18.3
Maroondah	9,224	10,891	18.1
Shire of Yarra Ranges (S)	11,651	13,676	17.4
	<b>Women Part-time</b>		
	<b>1991</b>	<b>2006</b>	
Melbourne (SD)	319,414	364,938	14.3
Knox (C)	10,754	5,522	44.3
Maroondah	7,657	12,319	60.9
Shire of Yarra Ranges (S)	11,145	18,081	62.2

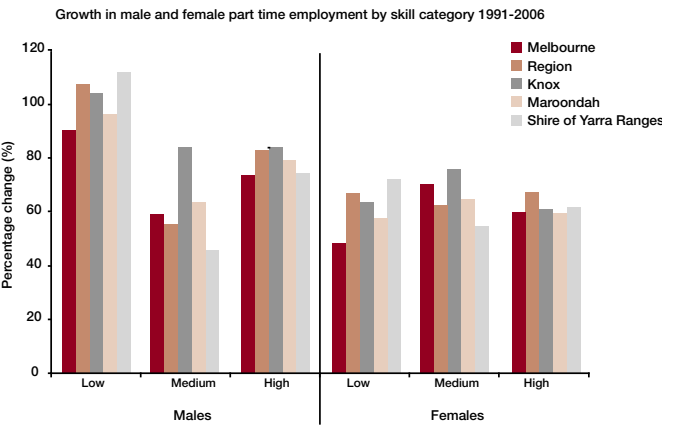
## Skill and Knowledge Intensity

Australian Bureau of Statistics (ABS) Census data, the Occupational Information Network (O\*NET) classifications of worker competencies and Australian employment data (ASCO 4-diff level) were used to map present and emerging skills in the region. Measures of knowledge and skill were used to analyse changes in the composition of employment for Melbourne (SD) and the Outer East. An analysis of ten areas of knowledge, and seven areas of skill was used to determine how the requirements of jobs for Melbourne (SD) and the Outer East has changed between 1991 and 2006

## Growth in Employment by Skill Category

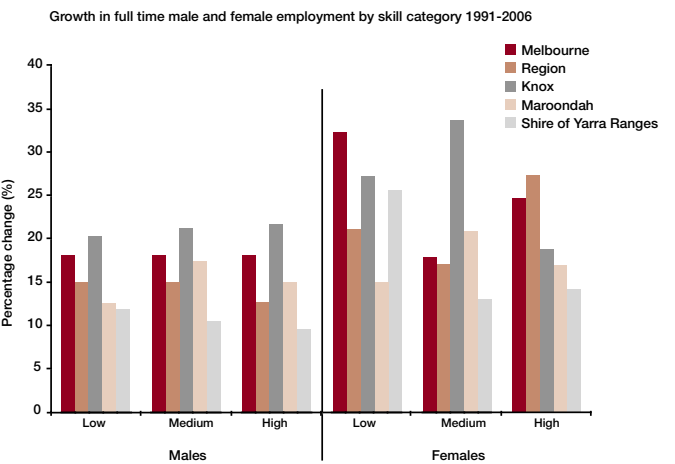
### Full time work

Employment growth has been divided into three broad skill categories. The graph below shows that Melbourne, the Outer Eastern Region, Knox Maroondah and Yarra Ranges all experienced growth. Employment growth for women was stronger than men in Melbourne and the Outer East. Employment growth was stronger on Knox than Maroondah and Yarra Ranges. Regionally, there is a shift from high to medium and lower skilled occupations.



### Part time work

The graph below (or above) shows the growth in part time work by skill category. The growth for women is significant given that more women than men work part time. For the Cities of Knox and Maroondah, skill intensive employment growth was stronger in the medium skill category. For Yarra Ranges, employment growth was stronger in the low skill occupations.



## Skill intensity

Skill intensity is a key issue for the region. Whilst the skill intensity of jobs in Melbourne has grown over the period from 1991-2006, it has declined overall for OEM residents. The graphs below (or above) show the decline or increase of skill intensity of jobs by the seven