

A METHODOLOGICAL SCAN OF NCVER FUNDED RESEARCH 1992- 2010

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Reflecting back...lessons from the future

- ◆ The purpose of the study is to provide a retrospective methodological map of government funded VET research as reported by NCVET for a nineteen year period (1992-2010).
- ◆ The aim of the study is not to judge research usage or impact but to investigate possible trends over time in respect to research quality and levels of methodological innovation and rigor.

Methodology

- ◆ Content analysis of qualitative secondary data publically available online through the NCVER webpage. The sample includes research report descriptions of NCVER funded research projects (managed research projects and in house research projects) conducted from between 1992 to 2010 (n=332).
- ◆ Data collected from the research project descriptions includes basic identifying demographic information on authors (number, gender, affiliations), research theme, along with data on research design, research methods, data sources, sampling and sequencing.
- ◆ ***Special thanks to NCVER staff for making access to the data after the recent NCVER website changes;***
- ◆ ***Phil Loveder and Jeanne Mackenzie-NCVER***

This paper...

- ◆ Presents preliminary findings & these will be discussed within the context of recent research on the increasing use of **mixed methods** and **interdisciplinary teams** in commissioned research in the US and UK.

NCVER

- ◆ The National Centre for Vocational Education Research (NCVER) is a not-for-profit company owned by state, territory and federal ministers responsible for training with a Board of Directors who represent state, territory, and Commonwealth governments, industry, unions, and training authorities.

NCVER's stated aim and vision:

- ◆ *It is a professional and independent body responsible for collecting, managing, analysing, evaluating and communicating research and statistics about vocational education and training (VET) nationally. NCVER's vision is to contribute to improvement in Australian's education and training system by ensuring that policy and practice are based on sound evidence. Its mission is to be Australia's leading provider of high-quality, independent information on vocational education and training to governments, the education sector, industry, and the community (<http://www.ncver.edu.au/>).*

National Strategies

- ◆ Three national strategies have set the direction for the development of VET in Australia for the period being reported through this research:
- ◆ ***Shaping our Future*** (2004-2010)
- ◆ ***A Bridge to the Future*** (1998-2003)
- ◆ ***Towards a Skilled Australia*** (1994-1998).

5 Research Themes

- ◆ ***Students and individuals***
- ◆ ***Teaching and learning***
- ◆ *Industry and employers*
- ◆ *VET system*
- ◆ *VET in context*

Methodological Scan

- ◆ The initial aim of this study is to conduct a scan of the research methods utilised in NCVER funded research from 1992-2010 within these five thematic areas and to calculate prevalence rates under four broad methodological categories:
 - quantitative (QUANT)
 - qualitative (QUAL)
 - mixed methods (MMR)
 - other

Qualitative analysis

- ◆ The study will then progress to more qualitative analysis of individual research projects conducted within these categories to gauge the quality and levels of methodological innovation being undertaken.
- ◆ This paper reports the preliminary findings from the initial methodological scan and presents data from the analysis of the majority of level 2 themes for two of the five main research themes:
 - ***Students and individuals***
 - ***Teaching and learning.***

Details of full study

- ◆ Content/document analysis of research project summary descriptions available on the NCVET website.
- ◆ A major aim of the research is to determine whether **mixed methods** approaches are being funded in Australian VET based research and to determine the **level of acceptance and adoption of mixed methods** in this discipline in Australia.
- ◆ This will then be compared to other similar studies conducted in the UK and US in government funded health related research.
- ◆ This will provide wider international and disciplinary perspectives on the acceptance and prevalence of mixed methods across government commissioned and funded research.

Research questions posited

- ◆ **RQ1:** What are the funding inputs and publication outputs for research projects across the five main research themes of NCVER from 1992 to 2010?
- ◆ **RQ2:** What are the prevalence rates for mono-method and mixed methods research approaches in NCVER funded research from 1992 to 2010?
- ◆ **RQ3:** What are the basic demographics and frequency of repeat funding of principal researchers for NCVER funded research projects funded from 1992 to 2010?
- ◆ **RQ4:** Does the NCVER funded research identified as using mixed methods meet mixed methods quality criteria?

1998 Office for Standards in Education (OfSTED)

- ◆ Review of educational research in Britain.
- ◆ Categorised educational research from four highly ranked journals (n=264).
- ◆ In an analysis of a sub sample of 41 empirical articles the study found four major themes, the second of these themes being:
 - ◆ ***problems with methodology.***

Office for Standards in Education (OfSTED)

- ◆ *'This largely focused on **problems** arising from the **conduct of qualitative research**, which made up a large proportion of the empirical work surveyed. In particular, the issues of **triangulation (or the lack of it)** and **sampling bias** were noted. Other issues concerning methodology arose around the **presentation of research**, including the **lack of reporting of sample size** and **method of sample selection**' (Tooley & Darby 1998, pp.5-6).*

Smith (2004) NREC research projects managed by NCVER between 1997-2000

- ◆ Analysis of National Research and Evaluation Committee (NREC) research projects managed by NCVER between 1997-2000
- ◆ Qualitative research dominated.
- ◆ Non empirical work (reviews of literature and research and new analysis of existing data sets) also featured strongly

Smith (2004) - use of mixed methods

- ◆ Smith (2004, p. 208) noted:
- ◆ *'increasingly important in NREC research has been the use of mixed methodologies'*.

Cameron (2010) use and quality of mixed methods research in Australian VET research

- ◆ *'The fact that mixed method studies represented **15% of all papers/articles** and **22% of all empirical papers/articles** indicates that the broader field of VET based research, as represented by two conferences and journal, is utilising mixed methods. It would seem that mixed methods is beginning to be discussed and utilised within these academic publications and forums'*
- ◆ (Cameron 2010, p. 37).

Plano Clark (2010)

- ◆ Acknowledges how important an indicator of the adoption and acceptance of mixed methods this type of research will be when she states:
- ◆ *'The importance of funding for research occurs through allocating resources, setting research priorities, and conveying norms for research within disciplinary and cultural contexts. As such, funding mechanisms play an important role in research because they directly influence the questions that researchers study as well as the methods used'*
(Plano Clark 2010, p. 428).

O'Cathain, Murphy & Nicholl (2007a, 2007b).

- ◆ The adoption and use of mixed methods within funded health services projects in the UK
- ◆ **30%** of these projects utilised **mixed methods**.

Plano Clark (2010)

- ◆ Trends in US health related projects funded by the National Institutes of Health and similar US federal agencies. Analysed 226 abstracts between 1997- 2008 on the (CRISP) database which is provided by the US National Institutes of Health
- ◆ The rate for **explicitly stated** mixed methods studies was **5%** with a trend towards increasing rates of mixed methods studies

Plano Clark (2010)

- ◆ *Funding issues are important to study to both learn about the process of successfully obtaining funding and to reflect on and critique the role of funding mechanisms in the conduct of mixed methods research. The purpose of this investigation is to examine recent trends in the use of mixed methods within federally funded research projects in the United States, specifically in the area of health-related research. Information about the prevalence of funded mixed methods projects is essential for considering the current level of adoption for mixed methods research as well as about the general adoption process for emergent research methods*
- ◆ (Plano Clark 2010, p. 429).

Figure 1: NCVET research funding 1992-2010 as per research theme

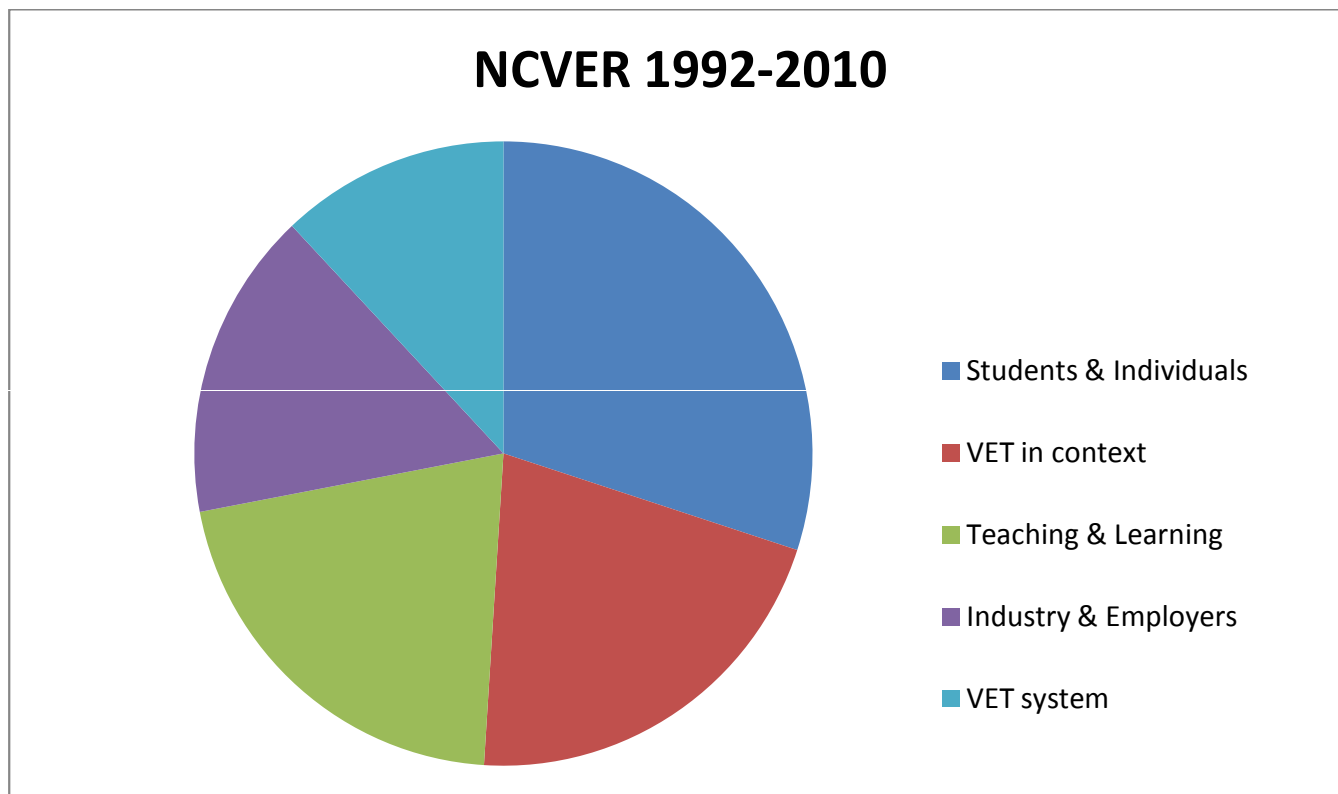


Figure 2: Project and publication frequencies from the five research themes 1992-2010

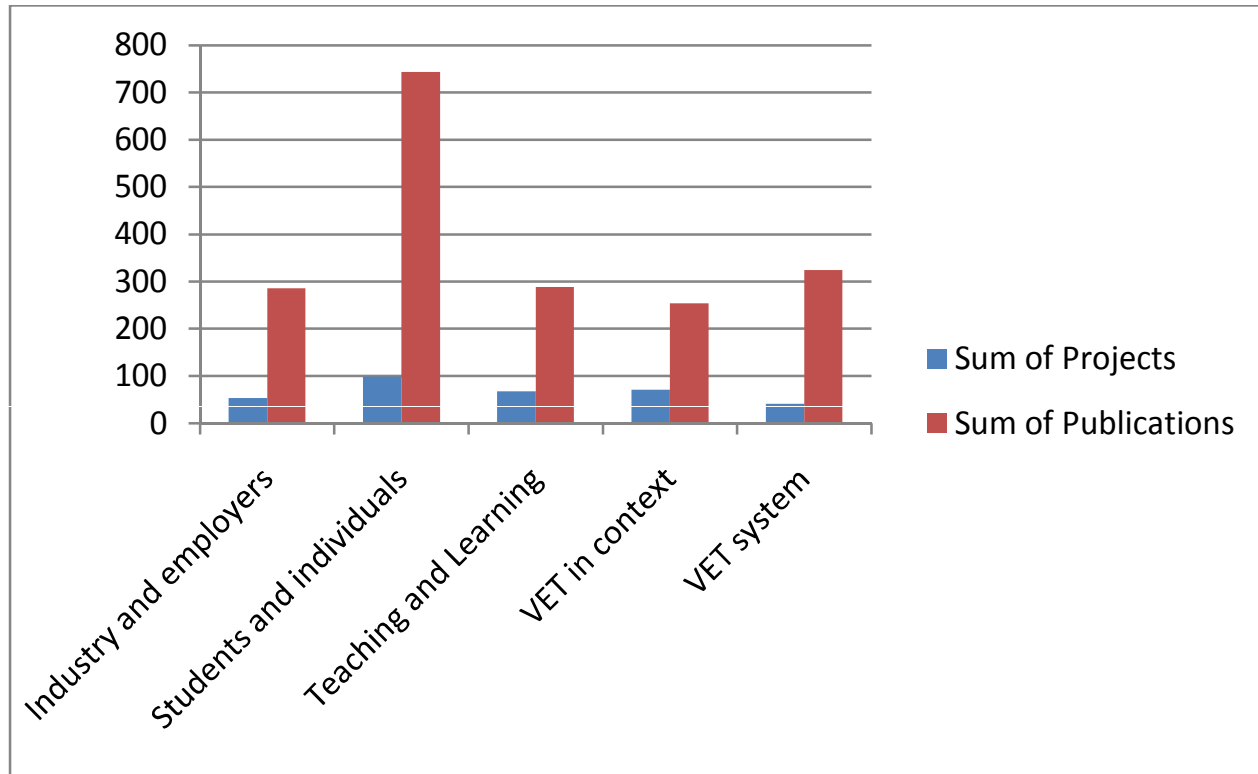


Table 1: Total NCVET research projects funded 1992-2010

Research Themes	Number of Projects	%	Number of Publications	%	Average pubs. to projects
Students and individuals	99	30	743	39	7.5
VET in context	71	21	254	14	3.5
Teaching and learning	68	21	288	15	4.2
Industry and employers	53	16	285	15	5.3
VET system	41	12	324	17	7.9
TOTAL	332	100%	1894	100%	

Table 3: Theme: VET in Context

Level 2 theme	Projects	Publications
Economic aspects of VET	18	42
Social issues	13	29
Cross sectoral issues	9	33
Regional issues	9	24
International aspects of VET	6	45
General	6	17
Contribution to innovation	4	13
Work changes	2	36
Lifelong learning	2	13
Environmental issues	2	2
TOTAL	71	254

Table 5: Industry and Employers

Level 2 theme	Projects	Publications
Investment in training	11	30
Industry and employer views	10	36
Specific industries	6	71
General	6	25
Skill shortages	5	34
Existing workers	4	9
Training within the enterprise	3	28
Industry organisations	3	4
VET/Industry partnerships	2	11
Group training	2	5
Specific occupations	1	22
Small business		10
TOTAL	53	285

Table 6: Theme: VET System

Level 2 theme	Projects	Publications
Funding and financing	7	18
VET providers	6	54
VET system performance	6	34
General	5	52
Apprenticeships and traineeships	5	38
VET workforce	4	41
Policy and reform	3	44
Training packages	3	7
VET in schools programs	1	14
Structure and governance	1	6
Management		8
Quality assurance		5
States and territories		3
TOTAL	41	324

Table 7: Theme: Students and individuals

Level 2 theme	Projects	Gender of PR	Approach
Careers and pathways	19	8 Female 11 Male	QUANT (4) QUAL (5) MM (3) Case Study (1) Develop framework (1) Lit review, data gathering & analysis (4) Not stated (1)
Student achievements and outcomes	15	3 Female 12 Male	QUANT (5) QUAL (4) MM (2) Data analysis (2) Literature review (1) Not stated (1)
General	7	3 Female 4 Male	QUANT (2) QUAL (1) MM (2) Surveys (2)
TOTAL	41 100%	14 Female 34% 27 Male 66%	QUANT (11) QUAL (10) MM (7) Lit review, data gathering & analysis (4) Surveys (2) Data analysis (2) Not Stated (2) Case Study (1) Literature review (1) Develop framework (1)
**Learner groups	58		

***Analysis not completed for this level 2 theme to date*

Theme: Students and Individuals

- ◆ **Quantitative** approaches are the most frequent (n=11) closely followed by qualitative approaches (n=10) and mixed methods (n=7). None of the seven mixed methods projects explicitly mentioned they were “mixed methods” but described the use of both a qualitative and quantitative methods.
- ◆ Gender of the principal researcher:
 - females 34%
 - males 66%
- ◆ *These results may change when the gender of principal researchers is calculated for the 58 projects under the level 2 Theme learner groups not yet analysed.*
- ◆ Of the 2 projects which did not state the “Approach”:
 - 1 commenced in 1999
 - 1 commenced in 2009.

Australian Research Centre (ARC)

- ◆ Early career researchers (**ECR**) applicants for **ARC Discovery Project** grants from **2001-2009** there was a gender imbalance:
- ◆ *The participant success rate for females on ECR-only proposals over the nine year period is 16.5 per cent compared to males at 19.9 per cent, a difference of 3.4 percentage points... The overall participant success rate in Discovery Projects for the nine year period is 25.8 per cent, which is 9.3 percentage points higher than females on ECR-only proposals (ARC, 2010, p.14).*

(ARC 2010, p. 15).

- ◆ *Although retention rates for female researchers is generally poor, for those that remain in a research career, success rates improve until a point 15 years from PhD and from then on females achieve very similar levels of success as males. At this point however the total number of female researchers is small.*

Table 8: Theme: Teaching and learning

Level 2 theme	Projects	Gender of PR	Approach
VET practitioners	9	4 Female 5 Male	QUAL (3) Action research (2) Adult Literacy project (2) Case Studies (1) Not stated (1)
Teaching and learning delivery	7	6 Female 1 Male	QUAL (4) Adult Literacy Project (1) Not stated (2)
Student assessment	6	2 Female 3 Male 1 not stated	QUAL (1) Case studies (1) Desk research (1) Not stated (3)
General	3	3 Female 0 Male	QUAL (1) Not stated (2)
Generic skills	2	0 Female 2 Male	Search conferences (1) Not stated (1)
Quality of teaching and learning	1	1 Female 0 Male	Not stated (1)
Competency based training	1	0 Female 1 Male	Survey (1)
TOTAL	29 100%	16 Female 55.5% 12 Male 41.5%	Not Stated (10) QUAL (9) Adult Literacy project (3) Action research (2) Case Study (2) Search conferences (1) Survey (1) Desk research (1)
**Literacy numeracy	29		
**Learning	10		

****Analysis not completed for these Level 2 themes to date**

Theme: teaching and learning

- ◆ Gender of the principal researcher:
 - females 55.5%
 - males 41.5%
- ◆ Appears to be a dominant use of **qualitative approaches** with no quantitative or mixed methods approaches listed.

The results for these may change when the gender of principal researchers is calculated for the 39 projects under the level 2 themes: Literacy numeracy and Learning groups.

- ◆ Significant proportion of projects which have not stated their “Approach” (n=10). Of these 10 projects:
 - 3 commenced in 2000
 - 2 commenced in 2002
 - 5 commenced in 2003.

Preliminary Findings – *Students and individuals*

- ◆ No substantial conclusions can be made as yet although this preliminary analysis does indicate that for three of the four level 2 themes for the main theme of *Students and individuals*, there is **almost an equal use of quantitative and qualitative** approaches and **mixed methods** (although not explicitly stated as such) is not far behind in terms of frequency.
- ◆ There also seems to indicate a **gender imbalance** in terms of principal researchers with two thirds being male.

Preliminary Findings – *Teaching and Learning*

- ◆ For 8 of the 10 level 2 themes for the main theme of *Teaching and Learning* there is a **dominance of qualitative** research and a **high rate of approaches not stated**.
- ◆ **No quantitative or mixed methods** research approaches coded for 8 of the 10 level 2 theme projects.
- ◆ There is a **more balanced gender ratio** in terms of principal researchers for this theme with just over one half (55.5%) being female.

Conclusion

- ◆ Preliminary findings
- ◆ Further analysis across all 5 themes and qualitative analysis of methods employed-specific focus on MMR
- ◆ Inform VET research community & broader MMR community methodological approaches funded by NCVET over a 19 year period -openness to fund emergent methodological approaches

Review of the National Centre for Vocational Education Research Ltd Research and Services Report (DEST 2006).

- ◆ Some concern in the VET sector of the over reliant nature of the research programme on a number of university researchers, despite NCVET working actively to encourage wide participation of researchers.
- ◆ **Recommendation 11: Broad participation by researchers**
- ◆ *NCVER should monitor the research grants programme to ensure that funding guidelines support broad participation by researchers in diverse institutional circumstances*
- ◆ (DEST, 2006, p. 6).

Call for papers

- ◆ *International Journal of Multiple Research Approaches*
- ◆ Special issue; MMR in Education
- ◆ <http://mra.e-contentmanagement.com/archives/vol/5/issue/2/call/>

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Mixed Methods Research in Education

Deadline for Papers: 1st May 2011

Editors: **Anthony J. Onwuegbuzie**, *Sam Houston State University (USA)*

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Contributions are invited to a special issue of the *International Journal of Multiple Research Approaches (IJMRA)* dedicated to *Mixed Methods Research in Education*.

Mixed methodologies have been utilized to a greater degree by educational researchers than by researchers representing any other field, with Alise and Teddlie (2010) recently documenting a prevalence rate of mixed methodology articles in education of 24%. Further, Collins, Onwuegbuzie, and Jiao (2007) reported that journals representing the field of education published the highest proportion of mixed methods research studies (32.2%) among nine fields representing the social and behavioral sciences (i.e., education, business, social work, public health, psychology, medicine, sociology, nursing, and library science). Some education disciplines have even higher prevalence rates. In particular, the prevalence of mixed methods

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