SUPPORT DOCUMENT

Assessing the impact of NCVER's research: Workshop paper – Support document

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NCVER

Assessing the impact of NCVER's research

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Workshop paper

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at
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Overview

Purpose of this workshop

Does NCVER's research have an impact on decision making in the VET sector? If so, how? Further, are there practices NCVER can take on to improve the impact its research is having? And can we even measure impact?

These are the issues we are interested in discussing in today's workshop. In particular, we want to:

1. discuss what we already know about research impact. This is both from the perspective of the literature but also from the experiences of workshop participants;
2. brainstorm approaches to assessing impact in the context of the VET sector; and
3. identify practices that can be implemented or enhanced to maximise impact.

NCVER's role and why impact is important

NCVER is a not-for-profit company owned by the federal, state and territory ministers responsible for training. We are unique in Australia's education system, being an independent body responsible for collecting, managing, analysing, evaluating and communicating research and statistics about vocational education and training (VET). We have a wide range of stakeholders including government ministers and advisers, public and private enterprises, researchers and research agencies, industry and employer and employee associations. Through the National Vocational Education Training Research and Evaluation (NVETRE) program we are responsible for distributing over one million dollars in Commonwealth Government funding for research each year.

One of the reasons why measuring research impact is important is that it provides directions on maximising research impact for future research projects. Knowledge of when and how research makes a difference may enable NCVER to make better decisions about how research funds are allocated, enhance value for money, and encourage competitiveness when seeking new contracts.

Selby-Smith, Figgis and many others, who thought about the issue of research impact in the educational sector about ten years ago, provided us with some important lessons. NCVER has implemented a range of practices for enhancing research impact, including for example:

- communicating with policy makers, practitioners, industry and other key stakeholders before, during and after the research process;
- strengthening collaborations between researchers, practitioners and end-users, or bridging gaps in what Figgis refers to as the 'connecting web';
- commissioning, through the NVETRE program, a comprehensive combination of long-term research programs and shorter-term projects against both the national research priorities and an open category; as well as supporting research-informed practice;
- enhancing the VOCED database as a central repository of educational research capturing both Australian and international studies; and
- refining communication and marketing strategies, i.e. ensuring key messages are clearly distilled from the research and tailoring presentations of research findings for appropriate audiences.

We want to build on this work and improve the way we do things, not re-invent the wheel. We know there are many ways in which research has impact. Tangible cases are changes in policy but there are also intangible changes in behaviour or attitudes. While we can cite (and indeed flaunt) many effective practices, perhaps we have not been as good at systematically measuring the effectiveness of the identified practices in shaping such changes. At the same time, the knowledge base relating to assessing impact has evolved, and we can learn from these models.

What do we mean by research impact?

Before defining impact, it is worth thinking about what we mean by research. For our purpose we use the term broadly to encompass work done that increases knowledge or applies existing knowledge in new ways. Research impact, then, can be seen as the beneficial application of the research across various domains. Selby-Smith et al defined impact in terms of its use and influence: has the research served a particular purpose (use), and has it made a difference to the decision-making process (influence)?

Workshop discussion questions

We invite workshop participants to give their thoughts to four areas in particular for this workshop.

To assist with discussion we have attached a background paper, which identifies these themes emerging from the literature:

- Conceptual issues – an understanding of the different ways in which research can be used is important in relation to what we are trying to measure and why.
- Methodological issues – we need to identify the different kinds of research impact, and then develop qualitative and quantitative indicators depending on what is being measured. The difficulty of measurement and operationalising the concept is challenging. There are, however, quite a few models we can draw on (see pages 6 – 13). The models are included to get us thinking about our own needs, rather than NCVER adapting any one model. No judgement is therefore made about the value of one model over another. On page 16 we have suggested a start point for brainstorming in relation to our own needs.
- Practical issues – we can also start thinking about effective practices for maximising research impact.

Discussion starter 1
We are interested in stakeholders' views about use of research. Does it have a conceptual or instrumental value? How do we recognise these values? What are your expectations?

Research can be used either indirectly or directly. Nutley, Percy-Smith and Solesbury discuss research use in terms of its:

- **conceptual value** – research that has an indirect influence affecting knowledge, attitudes and beliefs, and
- **instrumental value** – research that has a direct influence affecting decision-making in policy and practice.

Discussion starter 2
NCVER has offered a start point for thinking about our own model (page 16). What is missing? What is needed from your perspective? Where to from here in relation to determining the kinds of impact VET research has?

Key messages in relation to models of research impact are that:

- ✧ Research impact involves various stages ranging from initial outputs such as publications through to final outcomes such as economic or social impacts. There are also many kinds of research impact, and they are often discipline specific.
- ✧ Models are useful rubrics for identifying the different kinds of research impacts that exist.

Discussion starter 3
How do we get a handle on how much impact our research has had? What do you think of existing indicators? What do you think are the indicators for NCVER?

There are several challenges involved with measuring impact. In particular:

- ✧ there may be considerable time-lags involved in realising the impact of a piece of research;
- ✧ it can be very difficult to establish cause and effect;
- ✧ sorting out the effects of other research in the area can be problematic; and
- ✧ different discipline areas need different impact indicators; a one-size fits all approach is not feasible.

Key messages about measurement in the literature are that:

- ✧ previous attempts at measuring impact do not rely on citations as the critical measure, but rather focus on a broad range of indicators across several domains; and
- ✧ both qualitative and quantitative indicators can be used depending on what is being measured.

Discussion starter 4
What other sorts of practices can NCVER implement to maximise research impact? What can you do? How can we foster and strengthen better linkages?

We want to know from workshop participants what they find useful and what practices could NCVER and others implement to maximise research impact.

Outcomes of the workshop

The practical outcomes of the workshop will be a draft list of indicators of impact in the VET sector and how to measure them (both those currently in use and those we would like to be able to collect).

The discussions from this workshop will be written up in a document that will also incorporate information obtained from the attached background paper. This will provide us with the baseline data on measuring research impact and a draft list of indicators reflecting stakeholders' views about approaches. It is hoped that NCVER will use the information gathered to develop a model, indicators and practices for the ongoing measurement of research impact.

Following this workshop NCVER may undertake further consultations and we invite workshop participants to nominate other people you think we should be talking to.

Assessing the impact of research

We want to develop feasible ways of assessing research impact. To do so requires an examination of various issues. In this background paper we will discuss, based on a review of literature:

- ✧ definitional issues and the context of the VET environment in Australia;
- ✧ current approaches to measuring research impact including models of research impact; and
- ✧ practices to enhance research impact.

What do we mean by research impact?

Before defining impact, it might be useful to define what we mean by research. We use the term fairly broadly to encompass work done that increases knowledge or applies existing knowledge in new ways. Selby-Smith et al (1998) note that research in the VET sector is very diverse and includes many different approaches. This diversity will have implications as to how we measure impact.

So what do we mean by research impact? There are several definitions within the literature. Beacham, Kalucy & McIntyre (2005, p. 3) define research impact broadly as "the effects and outcomes, in terms of value and benefit, associated with the use of knowledge produced through research". Duryea, Hochman & Parfitt (2007) define it as "the beneficial application of research to achieve social, economic, environment and/or social outcomes".

In the VET context, Selby-Smith et al defined research impact in terms of two elements – use and influence. Use refers to whether the research has served a particular purpose whereas influence refers to whether the research has made a difference to the decision making process.

Decision-makers are not always aware whether research has use or influence.

These definitions show that research can have an impact in various ways which means that when we look to measure impact we need to think more broadly than single measures.

Contextual issues

In Australia, the VET sector works in a complex environment. Even ten years ago, Selby-Smith et al (1998) stated that "the VET decision making process is complex, complicated, dynamic and contested" (p. 5). In terms of policy there are layers to address in both Commonwealth and state governments. When we look at providers we see that there is a plethora of different types of providers. These can range from very large TAFE organisations with libraries and other mechanisms to access research findings, through to small community or regional providers with less access to resources.

Approaches to research are diverse in the VET sector – this affects impact and they way it is measured.

So when we think about impact in the VET sector, we need to be cognisant of the context in which the research is being undertaken. Nutley et al (2003) discuss several of these contextual issues which they term barriers and enablers to research. For instance, while it may appear obvious, for research to have an impact it needs to be adequately resourced.

The culture of a sector, organisation or profession is a factor in how much researchers engage with policy people and practitioners, and vice-versa. In some cases, researchers need the skills to effectively communicate the research to the end users. Organisations such as NCVER, however, provide an effective bridge between researchers and end users. As an independent body informing policy and practice in the VET sector NCVER has expertise in research, synthesising research, active dissemination and direct links with policy and other key stakeholders. On the other side, end users such as policy makers and practitioners need the time and skills to effectively interpret and use the research.

Systematic use of research is complex – different decision-making contexts means research is used in different ways.

Current approaches to measuring research impact in the social sciences

There are some common themes emerging from the burgeoning literature which are useful prompts for our own thinking on the matter. These are broken down into conceptual issues, methodological (models and measurement) issues and practical issues.

Conceptual issues

Research is generally an accumulative process which adds to what has gone before it.

One of the main findings from the Selby-Smith et al (1998) project was that determining the impact of a research project is complicated and non-linear. There is generally no one-to-one relationship between a project and the impact. The Allen Consulting Group (2005) elaborated on this by stating that there are several challenges involved with measuring impact. In particular:

- there may be considerable time-lags involved in realising the impact of a piece of research;
- it can be very difficult to establish cause and effect;
- sorting out the effects of other research in the area can be problematic; and
- different discipline areas need different impact indicators.

The first three points are inter-related. In relation to the fourth point, a one-size fits all approach to measuring impact is not feasible. Even within very similar disciplines a one-size fits all model does not apply.

Research impact has **conceptual** - affecting knowledge, attitudes and beliefs, and **instrumental** - affecting policy and practice values.

When thinking about what suitable measurements there might be, we first need to think about what the research might be used for. Nutley, Percy-Smith and Solesbury (2003) discuss research value in terms of its conceptual value and its instrumental value. They see the conceptual value of research as bringing about changes in knowledge, attitudes and beliefs whereas they see the instrumental value of research as bringing about changes in policy and practice.

Methodological issues

Models of research impact

Models of research impact assist in thinking through these issues. There are quite a few of these covered in the literature. Some of these models are described below.

Producer-push, user-pull and exchange processes

Beacham et al (2005) summarise a model that looks at the promotion of research not only from the researcher's point of view (producer-push) but also from the decision-maker's

point of view (user-pull) or both (exchange). The model also considers whether the outcomes are process oriented (such as publications), intermediate outcomes (such as change in awareness) or long-term outcomes (such as a change in policy).

The table below provides detail on outcomes and data sources for each of the types of measure.

Research impact involves various stages and there are many kinds of research impact. Models are useful rubrics for identifying the different kinds of research impacts that exist.

Table 1: Producer-push, user-pull and exchange processes

Type of measure	Outcomes – kind of impact	Data sources
Producer-push (researcher setting)		
Process outcomes	Publications	Numbers of publications
	Publications or other outputs targeted at specific decision makers	Number and type of interactions
	Interactions with decision-makers held at the request of the researchers	Researcher's resume, literature search
		Organisational information sources
Intermediate outcomes	Decision maker's awareness, knowledge of and attitude to research	Surveys or structures interviews with decision makers
Final outcomes	Decision-maker's self-reported use of research	Interviews with decision-makers, observations of processes, or analyses of relevant data
	Decision-maker's actual use of research given the competing influences in the decision making process	
User-pull (user setting)		
Process outcomes	Information requests by decision-makers	Research organisation's files
	Interactions with decision-makers at the request of decision-makers	Researcher's records and decision-maker's organisations files
		Researcher's resumes
		Number of web hits by organisations suggestive of containing decision makers
		Number of newsletter subscriptions from decision-making organisations
		Number of research projects commissioned by decision-makers
Intermediate outcomes	Decision makers awareness, knowledge of and attitudes to research organisations expertise	Surveys of or structured interviews with decision-makers
Final outcomes	Decision-makers self-reported use of research organisations as an information source	Surveys of, or structured interviews with, decision makers, document reviews
	Decision-makers actual use of research organisations as an information source	Unstructured interviews with decision-makers, observation of processes, analysis of data collected for other purposes
Exchange		
Process outcomes	Research organisations involve decision-makers in the research process	Research organisations files
		Decision making organisation's files
	Decision-making organisations involve researchers in decision-making process	
Intermediate outcomes	Decision maker's and researcher's assessment of how they were involved in the decision-making process	Survey of, or structured interviews with decision-makers

Final outcomes	Research organisation's research reflects (at least in part) the research needs and context of decision-making Decision-making organisation's decisions reflect (at least in part) the research available to them	Research organisation's files, and survey or interviews with decision makers Decision-making organisation's files and survey or structured interviews with researchers

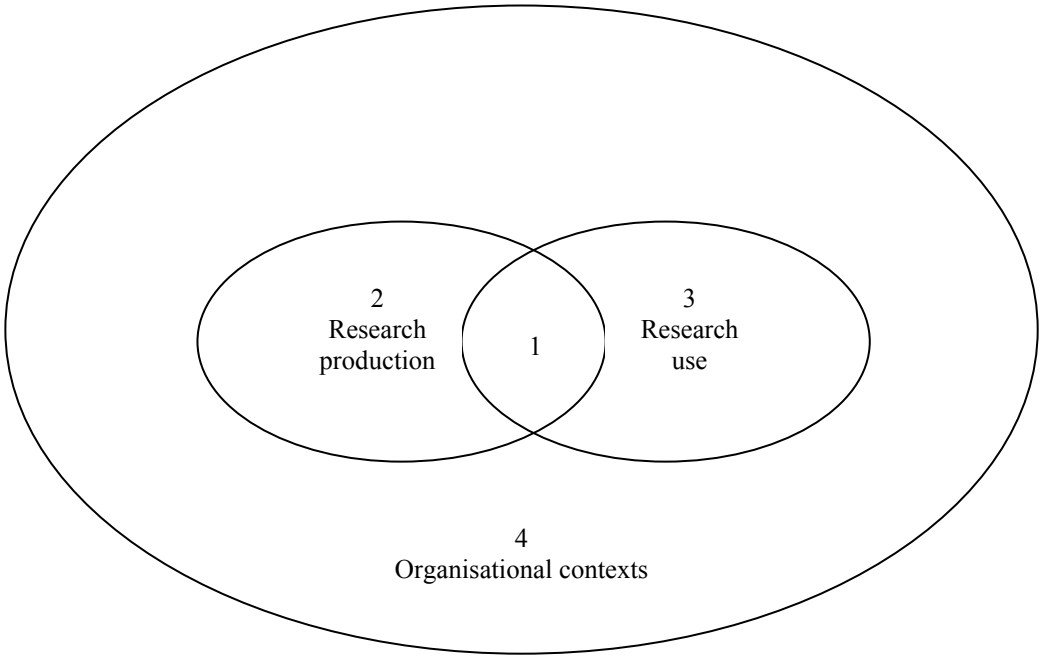
Source: Adapted from Beacham, Kalucy & McIntyre (2005, p. 10)

Maximising research impact is a change management problem.

A typology of practices

Nutley et al (2003) propose a model of research impact that involves a four-fold typology of practices. The main rationale for this model is that maximising research impact is a change management problem. They represent this approach with a Venn diagram that has two intersecting circles representing two domains – research production and research use. The intersection (1) of the two circles represents the interaction between research producers and research users. Surrounding this circle is a larger circle that represents the organisational contexts in which the research is produced or used.

Figure 2: Venn diagram of four-fold typology of practices



Each of the four domains has potential effective practices associated with them as shown in the table below.

Table 2: Effective practices for improved interactions between producers and users

Domain	Potential effective practices
1. Changes in research production/research use interactions	Use of mass media
	Presentations
	Lobbying
	Tailored material
	Networking
	Project partnerships
	Ongoing partnerships
	Reminders and prompts
2. Changes in research production	Research planning
	Research programmes
	Training and staff development
3. Changes in research use	Practice guidelines
	Demonstration projects
	Research champions
	Training and staff development
4 Changes in organisational contexts	Information and inquiry services
	Facilitation of research impact action
	Organisational initiatives

Source: Nutley, Percy-Smith & Solesbury (2003)

Research Impact Framework

Kuruvilla et al (2006) developed the research impact framework based on a review of research impact literature and research assessment criteria such as those set out by the UK Research Assessment Exercise panels. In doing so they identified four broad areas of impact – Research related, policy, service and societal impacts. Further description of these categories is provided in the table below.

Table 3: Guide to help structure research impact narratives

Narrative areas	Description
Description of research project/programme	Topics/research area: Geopolitical contexts: Funders and budget: Research management, influencing events and challenges:
1. Research-related impact	1.1 Type of problem/knowledge 1.2 Research methods used 1.3 Publications and papers 1.4 Products, patents and translatability issues 1.5 Research networks 1.6 Leadership and awards 1.7 Research management 1.8 Communication
2. Policy impact	2.1 Level of policy-making 2.2 Type of policy 2.3 Nature of policy impact 2.4 Policy networks 2.5 Political capital

3. Service impact	3.1 Type of services: health/intersectoral 3.2 Evidence-based practice 3.3 Quality of care 3.4 Information systems 3.5 Services management 3.6 Cross containment and cross-effectiveness
4. Societal impact	4.1 Knowledge, attitudes and behaviour 4.2 Health literacy 4.3 Health status 4.4 Equity and human rights 4.5 Macroeconomic/related to the economy 4.6 Social capital and empowerment 4.7 Culture and art

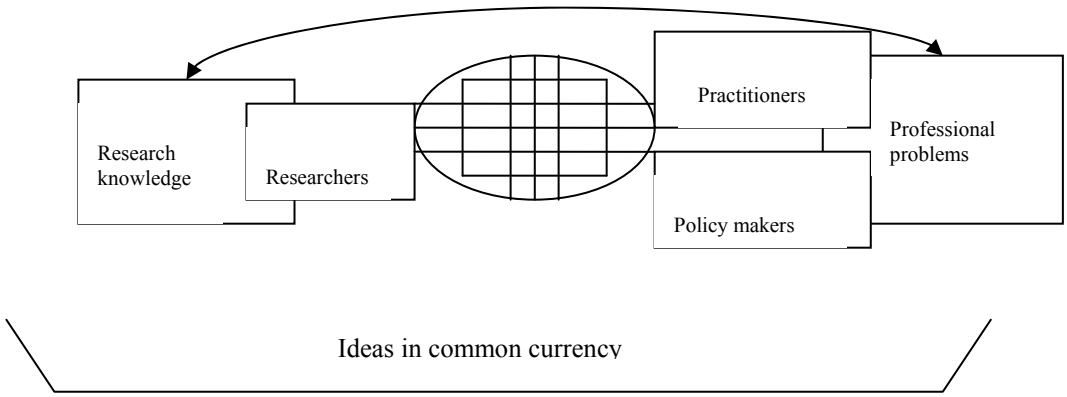
Source: Kuruvilla S, Mays N, Pleasant A & Walt G 2006 Describing the impact of health research: a Research Impact Framework , BMC Health Services Research, 6:134

User-Centric approach

The approach used by Figgis et al. (2000) to examine the relationship between education research and its outcomes was to track backwards from policies, programmes and practices to research findings. The rationale for doing this was that tracking forwards from research through to outcomes such as new policies or practices can be so complicated as to mask the original research. From this approach they developed a new 'user-centric' model for thinking about the relationship between research and policy/practice.

At the centre of this model is what is known as the 'connecting web'. This web, as the name suggests, connects the divide between researchers and practitioners/policy-makers. They argue that two key issues about impact refer to gaps in the connecting web. One gap refers to policy makers/practitioners engagement with the connecting web while the other refers to research engaging with its end users. Hence, much of this model centres on engaging with the connecting web. Figure 3 below presents this model pictorially.

Figure 2: User-centric model of the impact of education research



From their study, Figgis et al (2000) also developed findings about the major components of their model – the policy makers/practitioners, the researchers and the connecting web.

Findings about practitioners/policy-makers

- ✧ Practitioners and policy-makers decide for themselves whether they want to engage with new information from research.
- ✧ Practitioners and policy-makers reach out for research when they want the information rather than being passive receptacles.
- ✧ Potential customers for research need to be segmented in terms of their motivation.

Findings about the connecting web

- ✧ The connecting web is a 'learning space' regarding the take-up of research findings.
- ✧ Practitioners and policy makers bring a vast store of knowledge into the web and it is in the web where the networking of this knowledge occurs.
- ✧ Research messages put into the connecting web need to be sold. They shouldn't be 'dumbed down'.
- ✧ The most effective parts of the connecting web are places where two-way communication between researchers, practitioners and policy-makers can take place.

Findings about research and researchers

- ✧ The messages researchers at universities get about 'what counts' are counter-productive to increasing the impact of their research.
- ✧ Research budgets need to adequately incorporate the time and money it takes to communicate the findings of the research.
- ✧ Further development of research findings is a worthwhile investment.

The 'Payback Framework'

This model was developed in the 1990s as a way of assessing the impact of health research (Buxton & Hanney, 1996). It has two facets; a multi-dimensional categorisation of benefits from the research, and secondly a 'logic model' of how to best assess the benefits. The five categories of benefits from the research are shown in table 1.

Table 4: Categories from the Payback Framework

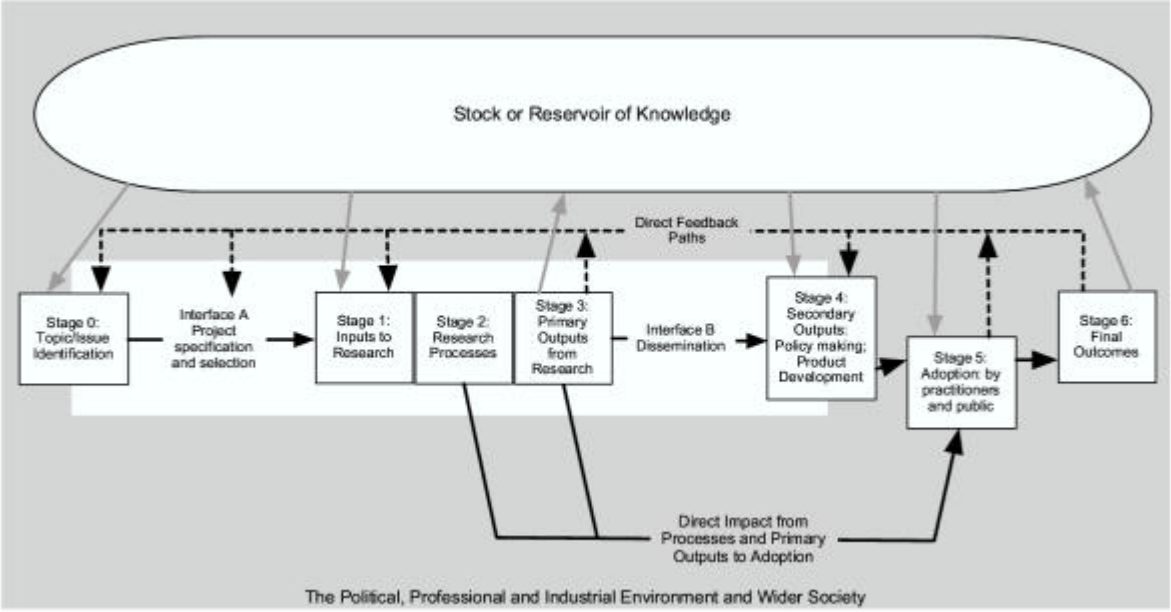
A	Knowledge production
B	Research targeting, capacity building and absorption (i) better targeting of future research; (ii) development of research skills, personnel and overall research capacity; (iii) critical capability to utilise appropriately existing research, including that from overseas; (iv) staff development and educational benefits.
C	Informing policy and product development (i) improved information bases on which to take political and executive decisions; (ii) informing product development.
D	Health and health sector benefits (i) cost reduction in the delivery of existing services; (ii) qualitative improvements in the process of service delivery; (iii) increased effectiveness of services e.g. increased health; (iv) equity e.g. improved allocation of resources at an area level, better targeting and accessibility;

	(v) revenues gained from intellectual property rights.
E	Broader economic benefits (i) wider economic benefits from commercial exploitation of innovations arising from R&D; (ii) economic benefits from a healthy workforce and reduction in working days lost.

Source: Wooding S, Hanney S, Buxton M & Grant J (2005)

The logic model, shown in figure 1 below, is a model for organising assessment of impacts of research.

Figure 3: Logic model for assessing the impact of research



Source: Hanney et al (2004)

Seven stages and two interfaces are identified in the model. It is worth noting that although the figure presents the various stages in linear fashion, in reality there are overlaps and feedback loops between the stages. There is also some correlation between the two elements of the Payback Framework, although the relationship is not one to one. The first two categories; knowledge production and research targeting can be considered primary outputs from the research. Informing policy and product development can be seen as secondary products, while health and broader economic benefits are the final outcomes. In terms of measurement, the further one gets away from the immediate outcomes the harder it becomes to measure. This is as over time there are an increasing number of other variables that can be attributed to the impacts.

This model has now been adapted by researchers in other fields of endeavour. For example, the RAND corporation adapted it to an evaluation of research funded by the Economic and Social Research Council (ESRC) (Wooding et al, 2007). Because of the original model's bias towards health sector research, some generalisations were made to reflect social science research. Their main modifications were to rename benefits as impacts and to generalise the impacts away from the health field. With these modifications however, the authors claimed that it was useful for evaluating ESRC research.

The model has also been adapted by the Primary Health Care Research & Information Service located at Flinders University. They undertook a study to see if they could develop a feasible way of assessing the impact of primary health care research (see Kalucy, Bowers & McIntyre, 2007).

They concluded that the model is useful, but once again with modifications. In particular, they proposed a new category, not previously covered, focused on enhanced structures for research transfer. This new category was seen to be an important addition as the work of their organisation entails relationships with policy makers as well as partnerships with community and health care sector agencies.

Given NCVER's role, the concept of research transfer is also an important consideration.

The models are useful in getting us thinking about the kinds of research impact that exist, but to be of practical value there needs to be *indicators* of impact in place that can *realistically be measured*.

Measurement issues

Time lags and untangling cause and effect can make measuring research impact a tricky exercise. In addition the impacts of effects are indirect, i.e. there is usually not a one to one relationship. The further out the impact from the completion of the research the harder it is to measure.

The Allen Consulting Group (2005) state that it is rarely possible to measure the impacts of research that are far removed in time from the original research, so it is better to concentrate on other outcomes. For example, while an outcome of educational research on skills formation could be increased GDP it would be very difficult to measure this as it is so far removed from the original research. For NCVER, measuring impacts on policy and practice is important. While this information will also be relatively difficult to collect, it is at least possible. Collecting data on research publications is relatively easy, but also perhaps not the most helpful. In the end it becomes a balancing act in terms of usefulness of impact indicators and ease of measure.

So how do we go about 'operationalising' impact measures? What techniques and methods have others used to assess impact?

A balance between the usefulness of impact indicators (the model) and ease of measures is required.

We will look at the Payback Framework as an example of the types of measurements that can used to assess impact. We are using this model as an example as it has been adopted by a few organisations as a way of measuring their research impact.

Measurement using the Payback Framework

We will examine the methods used by Hanney et al (2004) in one of the applications of their methodology, as well as two Australian reports in the area (DEST, 2005 and Kalucy, Bowers & McIntyre, 2007). Under a broad case study approach, Hanney et al used three methods to assess the impact of arthritis research. The three methods were:

- a bibliometric analysis of publications and citations resulting from the research;
- documentary and literature review involving an appraisal of key project documents and a review of core publications coming out of the research as well as any subsequent publications; and
- interviews with key informants about each of the case studies. These interviews used a semi-structured interview schedule that had been developed based on the categories of the Payback Framework as well as the Logic Model.

In a follow up paper, Wooding et al (2005) claimed that there is evidence from the study that the payback approach is a useful way of assessing the impact of research. One of the key conclusions of their study was that there are a large variety of paybacks from research. The authors claim that many of the paybacks would not have been identified without the structured case study approach. The following are examples of paybacks they found:

- the research team identified a large number of papers and citations that could be attributed to the case study projects;

- they found research capacity building as a result of some of the projects. For instance, several scientists were awarded PhDs or MDs as a result of the research undertaken;
- some of the case study projects were cited in systematic reviews or on clinical guidelines related to arthritis;
- there was claimed to be health benefits as for example some of the papers recommended arthritis treatments which were subsequently taken up; and
- the authors claim that there were some economic benefits, but that they were unable to quantify them.

Wooding et al do place certain caveats on their findings though. The first caveat relates to selection of research projects to assess and consequently generalisability of the findings. Due to budget constraints only a certain number of projects were able to be assessed for impact and so the authors questioned whether the findings could be applied across all projects. Secondly, there is difficulty in attributing the paybacks solely to the research given that there are other unspecified influences at work. Thirdly, the authors raise issues about the scoring system they use to assess impact[1]. The final caveat refers to elapsed time. The authors state that there needs to be a compromise between the quality of information used to assess impact and the time elapsed from finishing the research and assessing its impact. In the study the authors used a time span of ten years.

Previous attempts at measuring impact do not rely on citations as the critical measure, but rather focus on a broad range of indicators across several domains.

The DEST report on measures of quality and impact of publicly funded research in the humanities, arts and social sciences proposed an 'audit model' for assessing research impact. This firstly involves research organisations or the like collecting evidence on the impact of their research and building a case for effective impact. This is then 'audited' by experts in the area to assess how strong the case for impact is. The evidence collected can take many forms across the payback categories (e.g. see the items in table 1 above). The report also emphasises that the evidence is discipline specific, so what applied for health doesn't necessarily apply for education.

The primary health care research project by Kalucy et al (2007) used three main data collection methods to assess impact. These data collection methods were very similar to the Hanney et al (2004) approach and included:

- an analysis of publications produced as a result of the research project;
- an analysis of documents associated with the research project; and
- interviews with the project's chief investigators and other persons nominated as key informants for the projects.

Both qualitative and quantitative indicators can be used depending on what is being measured.

The data gathered for these projects were analysed according to the categories in the Payback Framework and also the stages identified in the Logic Model. The project found that payback was a feasible method to assess impacts, although the categories needed some adjusting for their context. The authors saw it as a positive step beyond the traditional ways of measuring impact (citations) as they concluded that even projects with low citations can have high levels of impact. They also found that measuring impact for the last two categories of the framework (health benefits and broader economic benefits) was more difficult than the other categories. We mentioned earlier that impacts further away in time from the initial research outputs are harder to measure. They also recommended that researchers keep records of how their research is being used - poor record keeping was one of the obstacles they encountered in measuring impact.

[1] The scoring process was carried out during a two day workshop of the researchers. Evidence for each of the payback categories was scored on a scale from 1 (lowest) to 9 (highest). These scores were then analysed and scoring discrepancies were discussed in case of misunderstandings. Team members could then rescore the categories, which then resulted in a set of second round scores. The median of the second round score was then used for the final analysis.

Practical issues

Nutley et al (2003) in particular devote quite a bit of space to discussing practices for research impact. In a review of literature as well as case studies on research impact they uncovered 27 distinct practices to enhance research impact, which neatly fell into six categories:

- tailored presentation of research findings;
- tailoring research to user's needs;
- increasing communication between researchers and users;
- support for developing research-informed practice;
- rewarding and reinforcing research-informed practice; and
- staff development, education and training (Nutley et al, 2003, p. 14).

The authors also discuss practices they regard as being particularly effective. These are:

- active dissemination – this means tailoring the outcomes of the research to the needs of targeted audiences;
- links between researchers and practitioners – partnerships between researcher's and end users of the research enhance the impact of the research;
- facilitation of research use – this means for example training and development programmes for researchers and research users; and
- using expert and peer opinion leaders – these people can play an important role in raising awareness of research findings. They can also champion the research and thereby directly increase the impact of the research.

Impact is often a social exercise – linkages between researchers, end-users and decision-makers are critical. They can be strengthened - but can they be realistically measured?

In addition to these points, using multiple practices will also enhance impact. Examples of this are using different mediums to disseminate the research, preparing different materials for different audiences, and combining practices mentioned above.

There has also been other discussion in the literature on practices to enhance research impact. Selby-Smith et al (1998) discussed the importance of linkages between researchers and research users. That is, contact between the two groups throughout the study can influence impact and result in collaborative efforts.

On the other hand, Kalucy et al (2007) recommend structures and processes required to optimise impact. Examples of these include consultation with end users at the inception of the research, and researchers maintaining networks with critical stakeholders of the research. In addition, a planned dissemination strategy is seen as being important.

Nutley et al (2003) also recommend that an initial assessment of practices to maximise impact should be made at the design stage of the research. These can be reviewed and refined as the research does on. Hence, it may be a useful to have a section in project proposals on practices to maximise impact.

Towards impact measures for NCVER

The following table is a **start point** for discussion based primarily on the information contained in the background paper. The table outlines the impacts and indicators relevant to NCVER, and also indicates practices we currently do and those we might like to do. How do they look? What is missing?

Kinds of impact	**Types of indicators**	**Potential effective practices**	
Kinds of impact can be separated into immediate (i.e. process), intermediate and long-term impacts. They could also be further separated into research, policy and practice.	*These can include a range of quantitative and qualitative measures*	*What we think we do now*	*What could we do?* *Or how could we improve what we do?*
Research publications Targeted / value-added publications (i.e. research overviews, At a Glances) Interactions with decision-makers Decision-makers awareness, knowledge of and attitude to research Stakeholder's self-reported use of research as an information source Decision-makers involved in the process of research Information requests by decision-makers Research projects commissioned by decision-makers Examples of change in practice in the VET sector Examples of change in policy in the VET sector	Number of publications Number of information requests by decision makers Number of web hits Number of Insight (NCVER newsletter) subscriptions Number of commissioned research projects Outcomes of surveys or structured interviews with stakeholders	Stakeholder consultations in developing research priorities Analysis of publications and citations that resulted from the research (but only occasionally or on an ad-hoc basis) Involving decision-makers on research project advisory groups Active dissemination by tailoring products to different audiences Use of media Stakeholder briefings Conferences (No Frills), presentations and workshops Networking Project collaborations and partnerships Training and staff development – development of research skills and overall research capacity Leadership and awards (i.e. New Researcher Award at No Frills) Quality assurance in research management practices, such as peer review	Developing a central repository to collate the evidence base for impact (how is research being used) – perhaps an extension of VOCED? Seeking explicit statements about expected impact of the proposed research at NVETRE funding (proposal) stage, with subsequent evaluation of these impact statements Undertaking case studies of specific projects, or themes Better analysis of web-hits (i.e. recording why publications are downloaded) Analysis of Insight subscriptions Surveys / interviews of stakeholders

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