REFERENCES

Bridging Education Research and Education Policymaking

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ABSTRACT   *This paper examines the relationship between policy formation in the United States and educational policy researchers. The experience of one independent 'think tank', namely, Policy Analysis for California Education (PACE), located within universities, illustrates how research might inform policy and how it might not be victim to the problems, well rehearsed in the literature, of poor dissemination. Fruitful links between policy research and policy formation require close attention to the sources, channels and format of dissemination, to the nature of the message and to the characteristics of the policymakers.*

As education policy has become more complex and the need to demonstrate positive pupil outcomes has grown, US education policy research has expanded rapidly. There has been a pervasive feeling among policymakers and researchers alike that policy research either does not reach or is not used by educational policymakers; but the frequent citation or acknowledgement of policy research within the policymaking process indicates otherwise (Greenberg, 2000; Pelton, 2000). Indeed, rarely does an education policy story in a large circulation US newspaper not include some comment by a policy analyst in a university or independent 'think tank'. Frequently, legislators will introduce their proposals by including research-based studies for the need or design of their proposal. US foundations have poured millions of dollars into education policy research organisations both within and without universities.

Prior literature was pessimistic about the effectiveness of education policy research dissemination to legislators, bureaucrats, interest groups, professional associations, and so on (Cohen & Lindblom, 1979). These analyses of research-policy ties find major communication problems between policymakers and researchers. Some of these problems are inevitable, they say, because policymakers and researchers live in different worlds with differing languages, values and professional rewards. For example, researchers are promoted for publications in referred journals that stress theory and technical advances. Predictably, the products from this world would have less immediate value for legislators who need information that is applicable to a specific set of circumstances.

Education policy research is unlike research in the hard sciences, such as physics or chemistry, where the outcomes are more certain and predictable. Often it identifies probable outcomes and general principles that seem to apply in various social settings, so policymakers face the task of taking general social science information and applying it to specific contexts. For example, policymakers confronting an education finance problem rely on general principles to analyse the relationship between revenues and

various combinations of tax rates, tax bases and grant-in-aid formulas. Contextual knowledge is necessary to estimate what is feasible in a specific political environment and administratively workable given the relations between various levels of government. However, state-based policy research organisations are translating more general research findings into specific contexts.

More sophisticated studies have probed the indirect and subtle impacts of research and policy analysis. For instance, Carol Weiss contends that it is not the findings of a single study, nor those of a body of related studies, that directly affect policy. Rather, she postulates that findings, concepts and theoretical perspectives derived in research permeate and creep into the policymaking process. Research findings then percolate through that process and shape the way in which legislators think about educational issues. She terms this an 'enlightenment function' of research:

> Such findings do not necessarily imply that decision makers *act* upon the specific research has to say. But as previous studies have shown, decision makers process recommendations that emerge from research reports. They want to know about research information, along with a large array of other information, and filter it through their own judgement. In the complex world of policy making, they have to take account of more factors than any one research study, or even a body of research studies, encompasses ...

> They are concerned with values, i.e. with the ideological positions that research supports or challenges. They have to take account of interest, i.e. the effects of policy proposals on organizational survival and well-being, personal careers and advantage, both in terms of their own stakes and those of other policy actors. (Weiss, 1988b, p.2)

This article will focus upon the key role of education policy think tanks, policy brokers, and policy issue networks in the U.S.A. We have learned about how education research moves around and reaches policymakers—Weiss calls this 'knowledge creep.' Often informal contacts are a crucial channel for policy research diffusion. Sometimes research merges with a policymaker's prior advocacy position and becomes part of a policy argument. At other times research changes how issues are framed or questions basic assumptions about how to solve a problem. None of this obviates the tension between democracy and rational analysis, but policy research seeps into policy-makers consciousness and percolates through the policy system. First, general concepts and strategies for effective use of policy research will be presented. A case example of a US policy research organisation, Policy Analysis for California Education, will illuminate the application of each of these concepts.

A CASE STUDY: POLICY ANALYSIS FOR CALIFORNIA EDUCATION (PACE)

In order to understand how policy research can be disseminated and used, the role of policy analysis for California will be described. Examples of PACE work are provided to help the reader understand the substance of PACE's dissemination effort. The author has been Co-Director of Policy Analysis for California Education (PACE) since 1983, a think tank that is part of Stanford University and the University of California-Berkeley. PACE co-directors are professors, one at each university and a senior researcher in Sacramento, the California State Capitol. PACE's founding motto adopted Wildavsky's book title, *Speaking Truth to Power*. PACE utilises professors at the University of California and Stanford to do policy research, employs full-time

researchers, and relies on the three co-directors for research production. A recent external evaluation of PACE documents the successes and failures of our approach to influence California State education policy (McDonnell & Ream, 1999).

PACE was initially funded through a general operating grant from the Hewlett Foundation of Menlo Park, CA. A senior tenured professor became a co-director at each university. Over time, many California foundations have contributed to research funding, but about one-third of the funds have come from research contracts with California state government.

PACE uses many conduits for disseminating its policy research. These include:

- chronicling the conditions of education in California;
- identifying important future policy issues;
- analysing state education policy proposals;
- evaluating education reforms;
- compiling and analysing data on social and economic conditions that affect education. These have included studies of the conditions of education and children in California;
- comparing policies and practices in other states to provide contrast and perspective for California policymakers;
- providing technical support and policy design consultation to public officials;
- facilitating discussion of education issues among policymakers, professional educators, and university researchers;
- dissemination information on major state policy issues and trends;
- polling the public to ascertain public opinion on issues related to education reform;
- cooperating with other agencies and research centres to improve the quality of educational information and analysis available to policymakers, practicing professionals, and ultimately the public.

Since 1983, PACE has made a number of notable contributions to the development of thoughtful state policy in California. Listed below are a selected group of those accomplishments.

- *Conditions of Education in California* has been produced ten times since 1984. The volumes have covered a range of topics in education policy, and have always provided readers with up-to-date data on indicators relevant to public education. The document has developed a reputation for providing analysis in a framework that is accessible and useful to policymakers, educators, and interested members of the public.
- In 1989, PACE produced *Conditions of Children in California*. This 400 page book was made possible by the extraordinary collaboration of researchers and policymakers working together to identify a baseline on dozens of indicators relevant to the well being of children. The book has been updated once.
- Public school choice has been a research topic for PACE for a decade. PACE has produced a number of documents on the topic that include both general policy discussions and significant analyses of choice proposals in California. The most widely distributed work was produced during 1993, catalysed by a statewide referendum Proposition 174 to create a statewide voucher system. Public polling, enrollment modelling, and fiscal impact modelling were all incorporated in the work that was done to best explain the benefits and costs of the ballot initiative.
- During the past two years, PACE has worked on two projects where facilitating

increased cooperation between state agencies was a primary objective. PACE contributed to the development of a state plan on School-to-Career efforts working with the California Department of Education, the California Community College Chancellor's Office, and the Employment Development Division. In addition, PACE has analysed the supply and demand for childcare in California counties.

• Analyses of scores of specific policy proposals including teacher quality, school finance, alignment of education standards, and transition from secondary education to post-secondary education.

One year *Conditions of Education* was released with a companion document, *Rebuilding Education in the Golden State*, that outlined a ten-point integrated reform strategy for education. The combination of the two documents allowed PACE to play a role in numerous discussions about education reform and policy among stakeholders and legislators. The documents' release also resulted in invitations to speak about education reform to the California State Board of Education, the California Commission on Teacher Credentialing, the Association of California School Administrators, and superintendents' groups in the state.

Declines in state spending for California education in the early 1990s reinforced a recent shift in emphasis for PACE. PACE focused more activities on the early phases of the policy cycle through new studies to influence California's policy agenda. PACE anticipated rather than simply reacted to the state policy environment. This shift in emphasis is particularly important given the current political fragmentation and policy incoherence in Sacramento.

Practically speaking, this alteration, or realignment, entails added efforts at data-based policy analysis, gaining media attention for education policy alternatives; publishing more media opinion pieces; attempting to identify forums which can bring education, and the need to change it, more frequently and visibly to the attention of the general public and public officials; appearing on radio and television more frequently; and addressing larger numbers of public and professional audiences.

FACTORS AFFECTING SUCCESS OF DISSEMINATION EFFORTS

The theoretical and empirical knowledge available to guide research dissemination planning and development efforts has expanded dramatically in recent years. Early, disappointing efforts to disseminate the research and development products associated with the Great Society programmes of the 1960s and 1970s promoted investigation of the theoretical and practical issues associated with dissemination and identification of promising strategies for increasing the use of social science knowledge.

Decades of investigations point to five dimensions that influence the outcome and effectiveness of dissemination efforts: the *source* of communication; the dissemination *channel*; the communication *format*; the dissemination *message*; and characteristics of the *recipient*. These dimensions provide the framework for the design of the PACE dissemination programme. None of these factors, however, can be very influential if the policy analysis is low quality, and not data-based (Moore, 1988).

Source

Almost always, the source of dissemination information is outside and independent of the recipient individual or system. A sizeable body of research points to problems

associated with 'external agents' as sources of information. External agents often fail to achieve their objectives because they are viewed as outsiders imperceptive of local conditions, because they identify users or user needs incorrectly, or because they inspire insufficient trust or credibility. But substantial evidence also points to the success of external agents in fostering the use of social science knowledge (Weiss, 1999).

The effectiveness of external agents in providing information to appropriate users, and promoting its use, depends not so much on relative location, i.e., 'internal' versus 'external', but on *who they are*, individually and institutionally. From the user's perspective, information can be viewed as an asset, as a liability, or as simply irrelevant. Research indicates that the most critical determinants of an external agent's effectiveness are (Knott & Weissert, 1996):

- whether there is more than one agent delivering the message; single sources are demonstrably ineffective purveyors of social science knowledge to policymakers;
- whether the agents are seen as credible colleagues who possess acknowledged expertise;
- whether agents are familiar with the users' institutional and practical problems;
- whether agents are close enough to provide consultation on an 'as needed' basis;
- what kind of organisation the agents represent, for instance, one whose primary function is technical assistance, one engaged in extensive new research, research synthesis, or one representing some mix of the two.

Experience in state government is a crucial factor enhancing the effectiveness of PACE. PACE's three co-directors have held the following California government positions:

- President, California State Board of Education.
- Chancellor, California Community Colleges.
- Chief of Staff, California Senate Education Committee.
- Personal Staff, California Assembly Education Chair.
- Member of many one-time State Commissions to make recommendations or study policy issues.

This knowledge of how state government works, and the ability to empathise with government officials, enables PACE to be credible and to intervene at the right time in the policy cycle. Governmental experience also helps PACE to decide whether technical assistance is best utilised based on current knowledge synthesis, or whether a large new study is needed. In certain high-conflict situations new research may take too long or not add much more than a synthesis of the current knowledge base.

PACE chooses some of its policy analysis agenda each year based on which issues will have a high probability of state legislative action within a one or two-year time frame. Consequently, PACE directors conduct interviews with key policymakers and staff before the annual legislative cycle begins to gauge the most active issues that may be resolved in the short-term. PACE also selects its policy analysis menu by longer-term issues, but wants policymakers to see short-term results on at least part of its analysis agenda.

Channel

The dissemination channel designates the means for passing on information to recipients. Two aspects of this problem are particularly important to effective dissemination:

single channels, like single sources, prove ineffective for the dissemination of social science knowledge intended for policymakers, so ideal dissemination strategy provides distinctive messages through *multiple* channels; and the most effective formal and informal dissemination channels are the natural networks comprised of leaders and practitioners in the relevant social policy area, described by Helco (1978) as 'issue networks'. A network can form around vocational education, school finance, or science education (Kirst *et al.*, 1984).

Each issue network is a specific configuration of individuals encompassing researchers, academic intermediaries, research brokers and policymakers. In practice, many dissemination activities constitute what has been called 'artificial dissemination' because multiple channel, natural networks do not exist, are inadequate, or are overlooked by dissemination planners. Consequently, researchers should find and rely on networks where they exist, and use other dissemination techniques as necessary.

The use of issue networks is important for a number of reasons. Information is acquired and used only at a cost. Consuming information takes time and uncertainty about its value stands as an obstacle to its use. This is a major reason why policymakers do not 'search' for relevant information. Issue networks can reduce the costs of difficult access and uncertain value because the common mission of network members reinforces potential relevance. Further, issue networks increase utilisation because they are better able than are external dissemination agents to target appropriate agencies and individuals. And finally, they are a boon to dissemination because issue networks reduce the real or apparent threat of information. Information is not a neutral resource in a policy setting; its use is enhanced when it can be presented in such a way that users are least threatened and purveyors are seen as trusted colleagues (Walker, 1981).

PACE finds policy issue networks and creates relationships with members. PACE speaks at annual conventions of networks and establishes personal relationships with staff members. The PACE office in Sacramento can attend impromptu network meetings that arise as policy activity on a particular issue heats up.

PACE has created or nurtured policy issue networks where none existed. A national organisation that certifies outstanding experienced teachers wanted more participation from California teachers. Consequently, PACE created a network of organisations to examine the desirability of national teacher certification by the national Board of Professional Teaching Standards. This network was helpful in supporting state legislation that provides a $10,000 bonus to nationally board-certified teachers.

Format

The communication format is central to effective dissemination (Yanow, 1993). Many studies show disappointing dissemination outcomes resulting from the inaccessibility of information—the fugitive nature of relevant social science knowledge. Important information may be unavailable, or difficult to find without a formal search. Further, the *psychological* inaccessibility of information is equally problematic. The chief cause of this problem is inappropriate format.

Most policymakers and practitioners have insufficient time, patience or expertise to wade through lengthy, abstract, technical reports, which are the products most often issued by the academic research community. Costs of consumption rise unacceptably as potential users face the task of extracting information relevant to their setting, presenting it succinctly, and interpolating the significance for their institutional needs. Research findings on effective dissemination of written materials are consistent:

effective dissemination requires that these materials be jargon-free, brief and provide concrete illustration (Cohen & Lindblom, 1979).

While written materials that meet these criteria are judged most useful by policymakers, an effective dissemination strategy must incorporate multiple formats to transfer information. Decision-makers in a policy setting rely most heavily on oral presentation of information. Oral briefings serve several purposes; they can be targeted directly to user concerns and needs; and they provide the most effective means for two-way communication between the policymaker and the disseminating agency. Oral strategies also capitalise on the demonstrated merit of face-to-face dissemination. In many social sectors—education, medicine and criminal justice, for example—the primacy of personal contact emerges as a major aspect of successful research dissemination.

PACE's dissemination formats go beyond written presentation to incorporate oral, visual and personal strategies as well. PACE uses oral briefings of policymakers and staff to introduce written materials and stimulate interest in reading them. In meetings with major policymakers, such as a legislative chair or State School Superintendent, PACE directors bring several of our reports in case the conversation branches out to several policy domains.

'Op ed' (articles that appear on the opinion page of a newspaper next to the editorials) are also used to stimulate interest in PACE studies, and we know many policymakers read newspapers to form some of their views about particular policies. PACE holds periodic briefings for newspaper and television writers on specific topical issues that they want to cover. This stimulates frequent phone calls to PACE for research materials and quotes that can be attributed to a university-based independent think-tank.

Message

The communicated message—that which is being disseminated—influences consumer receptivity and use in a number of ways. Obviously, relevance to user needs is critical. Is the message central to recipient concerns and priorities? And, even if the message successfully addresses these concerns, does it fit with the information needs associated with particular phases of the policy cycle and the policy problem?

Policymaking moves through substantively different stages such as the initial decision to put an issue on the agenda. Information will be irrelevant if it is not synchronised with the special needs of each of these stages. Similarly, social problems are seldom 'solved' by a particular policy initiative; instead, policy problems and their solutions evolve incrementally over time. As a consequence, particular information needs change over time as well, even though the need for research on the fundamental issues underlying policy problems is a continuing one.

Similarly, social science knowledge has more value if it is embedded in the *user's context*, and provides specific guidance for policy decision-making and action. Effective dissemination presents contextually embedded messages, or contains information sufficient for users to understand the relevance of the message for their policy setting. The school reform efforts underway in Florida, for example, could not have been effectively implemented in New Hampshire because of these states' very different political cultures and commitments to local control. Achieving compatibility between message and context obviously requires knowledge of users' organisational settings and policy environments. PACE specialises in applying national and international studies to the California context where half the children are Hispanic (38%) or Asian (12%).

Only experience can help PACE adapt an idea like national vocational education policy to California where community colleges play a larger role than secondary education.

Finally, effective dissemination is a function of the extent to which information recommends action that is compatible with the institution's values, structure, capacity and resources. Typically, social science conclusions, such as 'more-research is needed', or 'few significant differences were found', fall far short of the clear sense and positive direction required by policymakers. While the social scientist's task is not to write policy, social science research intended for policymakers can identify and elaborate policy alternatives, stress their relative advantages, and point to positive courses of action or state context obstacles. California policymakers find that much national policy research is too generic and cannot be adapted to a huge state like California with over seven million school children.

Recipient Characteristics

From the perspective of dissemination managers, recipient characteristics that influence receptivity to and use of information pose perhaps the most difficult problem (Van Horn and Hetrick, 1987, Mazzoni, 1995). They include:

- The motivation to seek and use information.
- Resistance to outside sources or innovative suggestions.
- Sense of ownership of, or commitment to use particular information.
- Existing and incompatible policies.
- Insufficient resources.
- Fragmented authority to act.
- Competing or conflicting demands on institutional resources.

For example, the 50 US state departments of education differ significantly in their ability to review, process and act on information. Moreover, the utilisation or non-utilisation of information depends on the organisational processes and pressures which encourage or discourage the use of social science knowledge. Some of these factors— e.g., inadequate expertise—can be addressed by dissemination strategies. Others—e.g., incompatible policies or competing policy pressures—are less tractable. The salience of these recipient characteristics, however, underscores the importance of a two-way dissemination strategy in which providers acquire information about user needs, preferences and problems, and in which, where possible, users participate in framing research objectives. They also point to the importance of dissemination strategies that explicitly recognise the inevitable and desirable diversity in policy settings. In an education policy system as large and diverse as that of the USA, knowledge and strategies to overcome recipient barriers must be implemented on a decentralised basis through collaborators who know recipients well. While the focus in this overview is on the USA, there is international comparative literature. Husén and Kogan's book (1984), for example, includes case studies from Germany, France, the USA and Sweden. Weiss (1999) places this issue within UNESCO's membership, and includes an analysis of requisites for serious policy use. This includes the openness of the political system to outside information and the functional specialisation of government units and the policy arena. In all these nations, Weiss (1999) stresses:

> It takes more than one report, conversation, or presentation to capture [policymakers'] attention. In fact, researchers who have studied dissemination

of research findings highlight the need for on-going discussions between policymakers and social scientists over a period of time (p. 199).

The cumulative impact of this type of policy analysis can be quite significant.

PACE AS A POLICY BROKER

The five dimensions outlined above can be enhanced by policy brokers who bridge the gap between research and policy communities. Successful brokers tend to share several characteristics. They are skilled at translating technical reports into 'plain English'. They are accessible—usually only a telephone call away—to answer specific questions about the policy relevance of a particular study. Because they can synthesise several research reports into short, policy-oriented commentary, brokers are often featured speakers at conferences and invited to give policy briefings. They actively maintain linkages to policy networks and communities, and derive satisfaction from these personal ties. Some have worked in both research and policy arenas, occasionally moving back and forth between academia and policymaking. Brokers are able to move beyond a general academic description of an issue to pull together specific policy recommendations.

A broker's ability to translate written documents into oral commentary is particularly important. This survey finds that policymakers use oral modes of information frequently, and rely heavily upon them. PACE produces its own newsletter and short publications, called 'Policy Briefs', as well as long technical studies. Working relationships among PACE and policymakers are maintained over time, allowing each side to learn whom they can trust for reliable information. PACE has built up an extensive mailing list, including telephone numbers, of the organisation's members, assuring quick access to current information. Additionally, PACE sponsors conferences on specific policy issues and brings together a mix of researchers, practitioners and policymakers. Conference participants meet and share ideas directly. Such opportunities for informal, direct communication are considered particularly important by the state policymakers that PACE surveyed.

The information-producing firms identified poor presentation of information as the primary reason that their information is not used by potential clients. Material that is too long, complicated or written too technically will not be widely read. Furthermore, while policymakers overwhelmingly say they prefer informal, oral modes of communication, information-producing firms primarily disseminate written materials. Conferences, though time consuming, are considered useful for disseminating information among all policy groups. Research cannot be expected to anticipate the idiosyncrasies of a specific situation, factors that cannot be anticipated even by policymakers closer to the scene. Establishing more realistic expectations on the part of both policymakers and researchers is a crucial step toward creating a more productive partnership.

In 1999, PACE commissioned an external evaluation to assess the impact of its policy utilisation, strategy and tactics. Here are some illustrative examples of how PACE is viewed by members of the Sacramento policy community based on its external evaluators (McDonnell and Ream, 1999):

> When PACE reports to the [State] Board, their views are highly respected ... because of their involvement and past experiences, they report very well ... I feel

> comfortable with the results PACE bring to us. It's hard to get unbiased information, but I've grown very confident with their work. It carries a lot of weight with me personally. (State Board of Education member)

> PACE is one of the few California-based organisations trying to take a broad view of K-12. Few organisations have a view across the whole spectrum of education ... it's always important to have others around the table who aren't representing specific interests. It's also hard to go to academia to find people who are willing to pull-out policy recommendations from their research and bridge the two worlds. (Agency policy staff)

Respondents mentioned specific PACE dissemination activities they had found useful, including informal presentations at legislative and agency hearings, seminars, and the ability to call a PACE director to discuss a particular policy issue.

> For an organisation like PACE, part of it is being here. You establish your credibility in reports, but it is also being across the street in the state Capitol.

A number of respondents indicated that one of the ways they learn about PACE analysis and its directors' perspective on various educational issues is through mass media. Others noted that because of term limits and the rapid turnover of state legislators, one of the most effective strategies for gaining the attention of new legislators is through newspaper articles.

OTHER US POLICY ANALYSIS ORGANISATIONS

PACE is only one example of a research-based policy analysis centre, and the growth in number and scope of these organisations provides evidence of a growing demand for US policy research. The recent flow of government, foundation, and private money to a myriad of policy organisations is impressive. In addition to universities, substantial policy analysis is conducted by independent non-profit organisations such as RAND, American Institutes of Research (AIR), SRI International, and Abt Associates. RAND's annual education policy research expenditures are about $5 million per year. These organisations all de-emphasise philosophical analyses and stress empirical data collection, and at times they collaborate on complex studies. For example, as part of a $1.2 million evaluation of class size reduction in California, PACE collaborated with RAND and AIR. RAND and AIR have a large staff with achievement test design and analysis capacity. They can aggregate interdisciplinary research teams for large studies that governments solicit through competitive requests for proposals. In such collaborations, PACE provides both field research resources and policy brokerage capacity with Sacramento policymakers. For example, PACE's role will be to derive the state policy implications from the class size reduction evaluation data that RAND and AIR collect.

A relatively new part of the US education policy analysis scene is the numerous philosophically-oriented 'think tanks' that are funded by foundations and wealthy individuals. Right-of-centre think-tank operators include national organisations like Heritage and Fordham Foundations, as well as state-based groups including the Independence Institute in Colorado, the Pioneer Institute in Massachusetts, and the Pacific Research Institute in California. These right-of-centre think tanks are networked and opposed by left-of-centre groups such as the Economic Policy Institute, the

Institute for Policy Studies, and People for the American Way. These duelling think tanks exert a more philosophical approach than PACE in such issue areas as school choice including vouchers. Some think tanks, such as the Economic Policy Institute, are sympathetic to the teacher unions who oppose vouchers. Other think tanks such as Fordham are part of a foundation, but most foundations provide grants to either the right or left-oriented think tanks.

Consequently, policymakers are presented with conflicting policy studies all claiming to be data and research based. These contending studies tend to undermine the legitimacy of all education policy research, but the university affiliation is useful in offsetting this. The largest US university policy-research organisation is the Consortium for Policy Research in Education (CPRE) which includes the University of Pennsylvania, Harvard University, the University of Wisconsin, Stanford University, and the University of Michigan. CPRE's studies are not tailored to a specific state context like PACE, but do provide a nationwide perspective on comparative state and local policy options and implementation. CPRE uses comparative case studies of six to twelve states and national data-bases provided by the US Department of Education/National Center for Education Statistics. CPRE focuses on state and local policy, but does little work on federal education policy. The federal level is where ideological and advocacy think tanks are the most active in providing conflicting data, interpretations, and philosophical arguments (Smith *et al.*, 1997). In 2000, CPRE received a five-year renewal grant from the US Department of Education totaling $5.2 million which means federal support for CPRE research will span the period 1985–2005.

CONCLUDING COMMENT

Research can influence policy, but it is not easy or a direct line from study results to policy use (National Research Council, 1999). Nothing can replace good theory, data and analysis as the starting point. Moreover, there are risks to the academic policy analyst such as being branded by his academic critics as a 'policy advocate'. But US university scholars have been attracted to policy research because they see its impact upon public policy. Indeed, politics of education research output has declined seriously since 1980 because so many scholars would rather try to improve policy (Wirt & Kirst, 1997). US university researchers are not hesitant to criticise proposals of specific policymakers, and there is little that politicians can do in terms of reprisals against tenured professors. This independence enhances the media credibility of university policy research. PACE walks a fine line between being critical of California policies, and simultaneously maintaining access and working relationships with top policymakers.

The PACE case study had demonstrated that there are several dimensions of policy research that enhance utilisation by policymakers. The source, channel, format, message and recipient characteristics are crucial. Moreover, a significant effort must be made in policy research brokerage to maximise these five dimensions. More US universities and non-government research organisations have learned how to create and sustain the five dimensions in the past 20 years. Several flagship state universities now have policy units that are variants of PACE, including Florida State University, Indiana University and Michigan State University. Universities can play a crucial role in generating usable policy research, and US funders are increasingly recognising the value of university-based education policy units. Most major education schools have several

tenure-line faculty positions in the field of education policy, and expect these professors to influence policy.

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