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INTRODUCTION TO THEMATIC ISSUE: EDUCATION POLICY AND TEACHER EDUCATION

Bruce Haynes
Issue Editor

This thematic issue of the Australian Journal of Teacher Education contains five papers which relate to the theme 'Education Policy and Teacher Education'. The papers relate to two distinct aspects of the theme; education policy studies as part of teacher education courses and the influence of Australian government teacher education policy.

Education Policy Studies

The first three papers relate to the questions 'Why include policy studies in teacher education courses?' and 'What type of policy studies units should be in teacher education courses?' These questions are important because of recent changes in the study of education. There has been a marked growth in policy studies in education in the past two decades which is, in part, a reflection of greater interest in social policy studies generally. In North America, a number of major universities have reorganised their Foundations of Education departments around educational studies or educational policy studies or else they have included interdepartmental research centres or programmes concentrating on educational policy studies. Teacher education in some British and Australian institutions have also changed to include educational policy studies. So, it is appropriate to ask why education policy studies should be included in teacher education courses.

Some of the types of reasons which might be given for including education policy studies in teacher education courses are those which emphasise the technical competence of teachers, the professional responsibility of teachers to their students, and changes in the role of teachers. There are many approaches to education policy studies and which of them are deemed to be acceptable will depend partly on the reasons given to justify the inclusion of education policy studies.

To be technically competent, a teacher requires an awareness of current education policies so as to know what to do in line with current policy. Courses which include information about official policies have always formed a part of preservice teacher education and there seems little point collecting this information into units designated education policy studies.

More significant, as a reason for including policy studies in teacher education, is the requirement of professional responsibility of teachers for their students' well-being. Teachers, as educators, are responsible for

changing their students for the better. A classroom teacher who accepts the responsibility of an educator should not only be aware of the policies (made by the teacher and others) which influence the students in their care but should subject those policies to critical scrutiny to ensure that those policies are in the best interests of the students. As the teacher is accountable for what happens to the students in the classroom, then only those policies which have been subjected to critical scrutiny should be adopted in the classroom. School-level or national policies which have a significant impact on the interests of the students should also be subjected to critical scrutiny and the teacher has a responsibility to work for policies at those levels which are in the interests of the students. Part of the professional responsibility of an educator involves making judgements about what is best for students, making decisions about how and when particular worthwhile activities are to occur in the class and providing justifications to show why such acts were proper and professionally responsible. This professional education has been carried on in a variety of ways in the past but in recent years there has been a move towards providing forms of interdisciplinary units centred on the critical scrutiny of education policy. Part of the reason for such a move in Australia has been a change in the role of teachers in schools.

Teachers have traditionally been thought of as powerless technicians for whom the study of policy was irrelevant. Richard Pratte of the Department of Educational Policy and Leadership at the Ohio State University, in his article 'Educational Policy and Teacher Educators' provides an argument to show how the study of policy is an important part of professional education for teachers who are to exercise power, based on their technical competence as practitioners. In Australia, particularly in Victoria, recent developments have resulted in a change in the role of teachers which increases their power in policy making and implementation at school level. Devolution of responsibility from State Education Departments to regions and schools, combined with community participation in school-level decision making has increased the range and significance of teacher powers in education policy.

This is most evident in States which have abolished the Education Department and replaced them with Ministries of Education based on a concept of corporate management rather than the professional public service model of the past century. The change is likely to increase the personal involvement in education policy of State Ministers for Education and their personal advisors and to decrease the involvement of the senior public servant (equivalent of the Director-General) and the school principals. Appointments to head ministries and schools may be made on managerial talents rather than educational qualifications and so these major sources of education policy in Education Department systems will be reduced in power. Such a move leaves open the way for classroom teachers to be more influential in their own right in policy formation at the school level. It also

provides them with another type of task, to facilitate the effective participation in the policy process of parents and students as members of the school community.

The reason for inclusion of education policy studies in teacher education courses centre around the professional task of the teacher as it is now being constructed in the changing educational scene in Australia. But courses in education policy studies can have a variety of orientations and purposes. Academic study of education policy may aim to provide:

1. understanding of the content and assumptions of current policies,
2. understanding of education policies as vehicles for political aspirations,
3. understanding of the ideological context of education policies and
4. an understanding of the factors involved in the development of education policies over time.

A different orientation of education policy studies can arise when the attention is centred on what the effective practitioner is required to be able to do. An effective teacher is required:

1. to know what to do in conformity with current education policy,
2. to know how to get others to act in conformity with current education policy,
3. to know how to be a powerful participant in education policy making,
4. to know how to facilitate the fruitful participation of non-professionals in the policy process, and
5. to want to be a professionally active participant in education policy making.

The academic and participant orientations to education policy studies are likely to produce different kinds of courses in teacher education.

The North American Council of Learned Societies in Education (1986, p.5) provides a general statement when it says:

Foundational study of the interpretive, normative, and critical perspectives within education relies heavily on the resources and methodologies of the humanities, particularly history and philosophy, and the social and behavioural sciences. Its primary objective is to sharpen students' abilities to examine and explain educational proposals, arrangements, and practices and to develop a disciplined sense of policy-oriented educational responsibility.

This statement contains within it elements which raise two issues, the extent to which the purpose of education policy studies is to enhance the critical capacity and inclination of teachers and the relation of education policy studies to disciplined inquiry.

The first of these issues relates to the distinction made by Smith (1982, p.146) between 'policy studies' and 'policy' studies. By 'policy studies' is meant an attempt to understand the policy process in a bureaucratic setting in order to become a more efficient functionary in the system. By 'policy' studies is meant a critical analysis from the standpoint of an academic discipline, to use the conventions of that discipline (such as philosophy or sociology) to reveal some of the assumptions of the policy process in its accepted social setting. Such critical analysis may help empower the student to act more independently in the policy process. John Grimley, in his article, 'Critical Educational Policy Analysis: A Discussion of Perspectives', sets out some of the features of a critical approach to policy studies.

Rosa and John Madigan, in their article 'Foundation Studies and Multicultural Education: Implications for Tertiary Institutions', provide an argument which may be generalised from the example they use to other interdisciplinary or integrated education studies. They argue for a discipline based understanding of 'culture' so that teachers may be more effective in achieving the aims of multicultural education. A similar argument can be made for interdisciplinary education policy studies which empower teachers as critical participants in policy making. The argument is not that units on strategies for multicultural education or education policy process should not be included in teacher education courses. Rather, that methodological, integrated or interdisciplinary units should be supplemented by disciplinary studies. Interdisciplinary studies are most appropriate as a means of introducing students to the scope and importance of education policy for teachers. Interdisciplinary or integrated education policy studies can draw upon concepts, conventions and standards developed in sociology, philosophy, history, politics and like disciplines. The units can be structured in different ways, dependent upon the disciplinary understandings of the course designer. The students can follow the unit structure to achieve the objectives but do not have an independent disciplinary base for critical appraisal of either the unit content or structure. This lack of power is not a serious issue for introductory units but it is a serious deficit in teacher education if these are the only kind of units on offer.

Interdisciplinary or integrated units are also appropriate at an advanced level to draw other, unrelated, studies together in such a way as to focus academic understandings on practical problems and provide techniques for successful action. Where advanced integrated units rely on the practical teaching experience of the students as the sole basis for critical appraisal of the unit content and structure then students are only partially empowered. They may make critical judgements as to the relevance of the problems and the practicability of the solutions proposed in the unit on the basis of their experience. They are not able to perceive the assumptions upon which the problems and solutions were based and so have a limited capacity to make relevant applications in new situations or make critical

judgements as to whether the whole approach is appropriate for the situation in which they find themselves.

Government teacher education policy

The two main issues in tertiary education in the past decade have been the reduction of funding and the dramatic reduction in demand for teachers. These issues have combined in the Australian government teacher education policy and this is the subject of the articles by Porter and Ingvarson.

The reduction of funding to tertiary institutions since the Commonwealth has taken sole responsibility for that area is illustrated by the figures for the WACAE quoted by Porter. When this is combined with the elimination of the Profession Development Programme by the Commonwealth Schools Commission it amounts to a major decline in funding for teacher education in the past decade. This decline is even more marked because of the reduction in the number of places in tertiary institutions for teacher education students. Since 1975 there has been a major reduction in the demand for teachers as the schools coped with declining enrolments and reduced teacher resignations during an economic recession. In an effort to adjust tertiary education to changed policies on teacher education, the Commonwealth Government has made three major policy initiatives; the National Inquiry into Teacher Education (1979), the 'Razor Gang' (1981), and the National Review of Teacher Education (1986).

The first efforts of the Fraser government to impose its will on the States regarding teacher education were almost total failures. The Commonwealth commissioned Professor Williams to chair a committee of inquiry into education and training and Professor Auchmuty to chair a committee of inquiry into teacher education. These inquiries reported in 1979 and, while they each had some effect, they are both classic examples of failures to meet government expectations or to influence education policy. While the Williams inquiry was intended to solve the problems of secondary schools and show the way for education generally towards the year 2000, it did not make a significant shift in the status quo or to government education policy. Its recommendations on rationalising post-secondary education in Western Australia were successfully resisted. The radical recommendations (and their associated funding requirements) of the Auchmuty inquiry were quietly ignored and the problems of teacher education remained untouched in many States (although the closure of Graylands and an approximately 50% reduction in teacher education places in Western Australian represented State level initiatives in this area). In view of this failure to make a breakthrough in federal/state relations in this area and many others as well, the Fraser government tried a new tactic – the 'Razor Gang'. This review of government functions was a new way of making policy as it excluded most of the relevant participants. Framing the recommendations

relating to education was done without consultation with the States, or the Commonwealth education commissions, or the Commonwealth Department of Education, or even the Commonwealth Minister for Education. The uniquely centralised approach to policy making enabled tough decisions to be announced before vested interests could rally their forces to stop them. This tactic was successful in abolishing the Education Research and Development Committee but less successful in getting rid of the Curriculum Development Committee. The enforced amalgamation of teacher education institutions into multi-purpose institutions was also a mixed success. In some cases, Armidale and Newcastle, procrastination prevented amalgamation. In the case of WACAE, the Minister for Education in Western Australia (Pearce) and his predecessors in Opposition all decried the move but were unable to prevent the imposition of Commonwealth will.

Paige Porter's article 'Amalgamation from the Perspective of College Council: The Case of the Western Australian College of Advanced Education' reviews one of the consequences of the 'Razor Gang' approach to teacher education. The interplay of Commonwealth, State and institutional politics and policies are illustrated in this consideration of the development of an amalgamated teacher education institution into a multi-purpose institution. The W.A.C.A.E. example is all the more remarkable because since amalgamation, the College has undertaken a \$30 million building programme, over half of which was for State-funded initiatives.

The most recent (November 1986) initiative of the Commonwealth government in teacher education policy has been the release of the National Review of Teacher Education. This initiative follows the Commonwealth reviews of compulsory schooling (Quality and Effectiveness Review Committee, 1985) and post-secondary education (Review and Effectiveness of Higher Education, 1986) which seek to tighten control over expenditure of Commonwealth monies. Lawrence Ingvarson, in his article 'What Happened to the National Review of Teacher Education', indicates the unusual process which produced this report. The report was released by the Minister for Education after this article was written but what action is to follow is yet to become clear.

The relation between education policy and teacher education is the theme of this issue and the articles look at two aspects – education policy as subject matter in teacher education courses and the impact of government teacher education policy. Both areas continue to demonstrate significant development in Australia.

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EDUCATIONAL POLICY AND TEACHER EDUCATORS

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From the point of view of a practicing teacher, is the study of educational policy relevant to the day-to-day activities of teaching? In the traditional perspective the critical limitation of educational policy study is that there is little or no relevance for teachers. It is recognized, explicitly or implicitly, that teachers are subordinated to administrative supervision, a relationship which is incompatible with the concentration of power and autonomy that teacher making educational policy presupposes. For this very reason, then, course work in educational policy, as well as portions of a course devoted to educational policy, is judged a wasted effort.

Student testimony regarding the flaw-in-teaching-teachers-educational-policy thesis is not hard to come by, thus there appears to be validity in the traditional view. To discard it, compelling reasons and evidence must be advanced. In order to attempt this project, two interrelated questions need to be addressed: to what extent are teachers subordinate to administrative supervision? and to what extent do teachers determine educational policy?

One way of looking at the above questions is to determine if teachers can lay claim to professional status. That is to say, although considerable disagreement exists over the question of what is a profession, no such disagreement is found regarding the most important feature of professionalism, namely, the extent of autonomy in professional practice (Leggatt, T., 1970, 155-7). In other words, it is a widely accepted fact that professionals are not closely overseen at their work by supervisors. Professional behaviour is regulated by a code, either written or unwritten, which lays down the required professional standards, monitored all the while by selected members of the occupation, and helps to ensure the existence and high status of the occupational group as a formal association of work practitioners.

Can teachers lay claim to professional status and the autonomy or self-management that is part of being a professional? How do we determine the status of the teaching profession? Leggett informs us that without question, teachers cannot lay claim to elite status (Leggatt, T., 1970, 160). Employed in bureaucratic institutions, teachers lack professional autonomy and independence: they do not control recruitment to the profession, training, or certification, nor do they determine their own practice (they cannot turn away clients or fix fees) or conditions of service.

Yet it would be foolish to deny teachers the title of professionals which is enshrined in popular usage and census classification. Teaching is a profession but not a highly esteemed one. Of this we are quite certain. Now, it is clear that this speaks to what is. What is of importance in the context of the questions is not only what is but also what might be. In other words, of all the trends that presently and in the future affect the teaching occupation there is the reality of the bureaucratic nature of the work of teachers. Much has been written about this feature of school organization and the effects this has upon teachers and the nature of their role (Etzioni, A., 1969 and Lieberman, M., 1956). A summary comment is relevant here. The organizational setting of the school is bureaucratic in the classic Weberian sense, at least in a rudimentary form: there is a functional division of labour; the authority structure is hierarchical, disputes being settled by reference to superiors; and each employee derives his or her authority in the first instance from the office of teacher than from any personal qualities; great importance is attached to rules and to formal records; each client or pupil is treated impartially according to non-personal and general rules or criteria; and there are clear qualifications for recruitment and promotion according to seniority.

Moreover, the position of the teacher, unlike other workers in industry, is quite distinct in that all members of the school hierarchy are professional educators who have shared the same training. So that, although some degree of conflict may be inevitable for the professional working in a bureaucratic organization owing to the clash of criteria in relation to proper work practice and to the authority system, and especially to the enfeeblement of the service ideal at the hands of the client orientation of the teacher, bureaucratic control reflects low constraint. That is, although schools are organized hierarchically, the work of teachers is not closely supervised, at least compared to manual workers, and they appear to exercise a good deal of autonomy in their daily routines. This relationship between teachers' work and administrative supervision is sometimes referred to as a 'loosely coupled.'

Additionally, there is in schools what Lortie has called 'zoned decision-making.' (Lortie, D.C., 1969, pp. 12-15) Although the teacher has to accept a superior's authority in many areas, the individual teacher nevertheless has a free and quite independent zone of decision-making: the privacy of the classroom. When the classroom door is shut each teacher determines the manner in which she will work. It is precisely this sense of individual autonomy that makes bearable, for the teacher, employment in a bureaucracy. It is held that the content of one's teaching is one's right to determine, however defined, the curriculum.

Yet formulations of this type fail to consider the important distinction between individual and group autonomy. The autonomy of the individual

teacher in the classroom is to be sharply contrasted with the autonomy of the group seeking to control educational policy decisions affecting students, parents, and teachers. Moreover, the formulation fails to consider the highly complex ways in which the structure of schooling itself inhibits the autonomy and, hence, the participation in educational policy making by teachers. A major concern of critical theorists in education is to offer analyses of exactly this kind. In this view, the 'zoned decision-making' characteristic of school organization, while true in fact, does not in itself make teachers autonomous. Indeed, it is the case that it obscures or mystifies the fact that teachers are not autonomous. Lack of autonomy, however, is not due to the direct control or supervision of administrators, rather, the constraint on teachers' autonomy issues from a structural factor, the very organization of teaching itself. This is the notion of 'technical control,' developed by the economist Richard Edwards (1979, p. 117). His argument is simple. Like the auto worker, the teacher does not determine her schedule, where and when she will work, or what the general content of her work will be. The point is that most workers, including teachers, are controlled not so much by direct control of management but by the indirect structures of organization, the organizational character of the job.

Edwards' notion of technical or indirect control, as applied to teaching, suggests that once the 'loose coupling' phenomenon is accounted for, still other similarities between teachers and auto workers are evident. For example, standardized tests and school- or district-wide educational objectives are determined by 'experts' or administrators, and teachers are confronted with predetermined teaching schedules that function in much the same manner as does the assembly line for workers. When we add to this the routines of filing daily lesson plans and proscriptive teaching plans to meet state and federal guidelines, adopting uniform textbook policies, etc., we witness a regimen of daily and weekly activities that leaves teachers with little control over their work. Clearly, Edwards' reference to 'technical control' to describe the constraints imposed on workers by their use of a particular production process has its parallel in curricular form. The point is that teachers, like most workers, are constrained by the organizational character of their jobs as much or more than by the direct control of administrative supervision. (Bidwell, C., 1965 and Goodlad, J.C. 1983, pp. 188-91)

On a different tack, the loose-coupling element and zoned decision-making of teachers, clearly common sources of reward for teachers, combine to divide teachers from each other and prevent the development of those significant collegial relationships that would allow the emergence of a cohesive community of professionals (teacher solidarity). In other words, the teacher's classroom autonomy tends to exclude a teacher's own peers, those with most relevant experience for passing judgment, from the classroom.

Andrew Gitlin (1983, pp. 193-212) addresses the issue of teacher autonomy in terms of the 'indirect' control that is exercised not by management but by the curriculum used by teachers. His ethnographic study of a predetermined curriculum (Individually Guided Education or IGE) revealed that teachers' use of a predetermined curriculum prevented them from questioning the values, knowledge, and attitudes embodied in it, primarily because they were preoccupied with the standardized tests given during each grading period. The curriculum form, in other words, made it difficult for teachers to question what was or what should be taught and to consider alternative conceptions of ways in which the material might be presented and lessons evaluated.

On a similar tack, Gitlin argued that the organization of the teaching force can help to isolate teachers and to pit them against one another in competition for recognition from administrators. The terms of competition, of course, are established by the predetermined curriculum. Gitlin also claimed that the physical layout of the building, the dispersion of teachers, and their varying lunch schedules and/or preparation period restricted communication among them, and the competitive non-interaction between teachers weakened their autonomy over the entire teaching-learning enterprise.

From his explanation linking the predetermined curriculum and loss of teacher autonomy, Gitlin argued that teachers were 'deskilled' in curriculum conceptualization by being discouraged from reflecting on their practice. Yet, paradoxically, they were 'reskilled' in such areas as teacher clarity, classroom management, co-operative teaching strategies, and time allocation, all of which were aimed at improving 'teacher effectiveness' but only in ways *reproductive of predetermined curricular goals*. Teachers in this context were not encouraged or rewarded for fundamentally creative or transformative behaviour. Specifically, they were discouraged from questioning and making judgments about curricular form and content.

Michael Apple (1982, pp. 254-6, 275-303) among others, has described the overall effect of these factors, particularly the development of standardized or 'teacher-proof' curricular, as a process of 'deskilling' in teaching. Moreover, dividing areas of competence into increasingly narrow and largely technical spheres of specialization reduces the teachers' potential for independence and, particularly, creative or transformative activity. As increasingly specialized and isolated technicians in a particular domain of teaching, teachers are unable to draw from the experience of other teachers, from other areas of teaching, to resolve problems they confront.

It is important to add that the growing tendency to separate conceptualization (planning) of a task or activity from its execution (implementation) and evaluation (testing) in teaching by making conceptualization and evaluation the province of 'experts' or administrators

has perhaps improved teacher efficiency and made learning standard, but it denies teachers autonomy over work roles. A consequence of this appropriation by experts and administrators has made of teaching a fragmented process, producing alienation and frustration.

What the foregoing demonstrates is that teachers are not so much subject to direct administrative supervision or control as they are subject to indirect 'technical control.' The more specialized the teaching task, the greater loss of autonomy, with a resulting decrease in educational policy decision-making in such areas as, say, curriculum policy and development. In short, the more specialized the teacher's task, the greater the potential loss of self-management or autonomy.

In summary, from this brief analysis we reach the not unexpected conclusion that teachers have little autonomy in their work and, hence, are not sought after, active participants in the making of educational policy. Put differently, if the work of teachers has been differentiated and rationalized so effectively, how can teachers lay claim to being educational policy makers? It would seem that the view that educational policy study is of little or no relevance to the teacher is not incorrect. Teachers, it would seem, have little or no autonomy, hence power, to make educational policy.

Within the gloom and doom of the foregoing, however, a small space appears that should not go unnoticed. In other words, an important limitation on the autonomy of teachers has been noted but, what is of equal importance is that, concomitantly, there is a recognized tendency on the part of the general public to accept teaching as a profession, albeit not a highly esteemed one. Now, if one thinks about the matter for very long, one can see that the actual practice of regarding teachers as professionals is in fact the rule not the exception. But it is certainly not enough if teachers desire autonomy and participation in educational policy making. If one insisted on enlarging this space – the conversion of the teacher's role from that of low status professional into that of an elite professional – then it pays to ask what is it that makes a work occupation an elite profession? One way of answering this is to say that much of what elite or autonomous professionals do is, in fact, rather complex and its outcome generally unpredictable. What is done cannot be reduced to simple or even complex technical capabilities. Thomas Johnson (1977, pp. 93-110) has constructed such an argument in his use of an "indetermination/technicality" ratio (I/T), initially expounded by Jamous and Peloille (1970, pp. 111-52) to discuss the character of different occupations. The I/T ratio expressed the possibility of transmitting by way of apprenticeship the mastery of intellectual or material instruments used to achieve a given result. This makes it possible to appreciate the limits of this transmissibility, i.e., the part played in the production process by "means" that can be mastered and communicated in the form of rules (T), in the proportion to the "means" that escape rules and, at a given historical moment, are attributed to virtuosity of producers (I) (Jamous, H. and Peloille, B., 1970, 113).

What is significant about the I/T ratio is the notion of indetermination, or what Johnson called the 'structure of uncertainty.' His use of indetermination entails the notion of unpredictability, particularly an uncertainty associated with a task. Obviously, the physician, the lawyer, and the teacher do not assume they are dealing with highly predictable events in their occupational lives. Rather, they are engaged in tasks of great complexity and any prediction about their outcome is necessarily fraught with uncertainty. In teaching, for example, students respond to teaching activities in highly complex and sometimes totally unimaginable ways. The artful teacher, the teaching virtuoso, pays attention to the nature of her students by noticing and responding to highly individualistic and idiosyncratic responses, modifying aims and methods in the course of her teaching. The artful teacher responds to the unforeseen (and unforeseeable) teaching/learning process itself. Her teaching is, then, not comparable to an auto mechanic following a fixed plan. Rather, teaching is necessarily conceived along the lines of conceptualizing a plan with aims and methods, but a plan *necessarily modifiable by its own attempted execution*.

Obviously, no set of exclusive rules can ever be formulated to cover the myriad tasks of teaching, since no formula will adequately cover a situation marked by continuing change involving at least two agents (let alone twenty or more) who are, in general, not subject to known, fixed laws of behaviour. In this sense, then, because the teacher cannot determine the students' responses in advance, an indeterminacy results.

The point is clear. Most so-called professions have a high I/T ratio – the mere presence of technicality, or the codification of technical knowledge, according to Jamous and Peloille, does not guarantee an occupation's professional status. This is so because the greater the degree to which there is a rationalized and transferable body of knowledge, the greater are the possibilities of its being effectively fragmented and rationalized through a placement within a new, deskilled process of production (Abercrombie, N. and Urry, J., 1983, pp. 76-6).

By contrast, indetermination refers to the unformulatable aspects of an occupation's knowledge base, the indeterminate qualities which are necessary but which cannot be expressed in codifiable form. Examples of this sort would be the basis of a lawyer's treatment of a defense (or a prosecution) before a jury, the doctor's powers of diagnosis and bedside manner, the teacher's charisma while lecturing, and, of course, the university professor's critical and exacting scholarship resulting in the production of new knowledge.

We are, of course, discussing qualities which cannot be acquired with mere technical training. These understandings and skills require intuition, initiative, creativity, experience, and a degree of talent which are essential for success. Moreover, there is no particular means for instilling these

qualities in some magical mixture in potential practitioners apart from some variety of mentor-oriented, experience-based learning arrangement. Because the quality of virtuosity cannot be codified without being damaged or destroyed, it must remain indeterminant. And because virtuosity is experientially based, it must be ultimately, in one way or another, controlled by knowledgeable active members of the profession – those skilled in its detection and cultivation. In this regard, then, the best mark of a truly autonomous profession is the extent to which the educational process is defined and conducted by the profession itself.

Given this case, if teaching becomes a high-technicality occupation, and teacher training becomes highly technical and behaviouristic in its knowledge base and practice, this will ensure a teacher work occupation form of knowledge and a competence inimical to establishing and sustaining a high I/T ratio and a high degree of professional autonomy for teachers. Stated differently, teachers are not likely to determine educational policy matters if the occupation of teaching is viewed in terms of technical functions alone. Given the high degree of fragmentation and rationalization that exists in the organization of teachers' work today, making primary the technical functions of teaching is likely to reinforce the process of deskilling, whereby supervisors and managers acquire greater control over the structure of schooling and, hence, indirect control over teachers.

One way for teachers to gain elite professional status, increase their autonomy, and gain a stronger voice in educational policy decisioning is to increase the I/T ratio of their knowledge base. A first step in establishing the autonomy of teachers is to dramatically shift the preparation of teachers from teacher *training* to teacher *education*. In other words, teachers must lay claim to professional autonomy based upon a superior education and a body of knowledge grounded in the liberal arts so that teaching is infused with knowledge codes which give teaching an indeterministic quality. Indeed, the liberal arts are essentially indetermination itself. There is, in other words, no 'matter-of-factness,' no 'givenness' about the liberal arts. Each offers to the individual a questioning of technicality itself, probing, as it were, the technical assumptions which prevail in decision-making, as well as challenging assumptions that teachers are mere bearers of technology, or that the human role in teaching can be reduced to a distinctively secondary status. The liberal arts can serve as the brake or policing element regulating the technical, especially the tendency in policy making to discover effective means and the way of judging these means in their performance is relatively ignored. The liberal arts encourage us to ask the question, How well are the technical means doing? This is a sphere of vital concern that one misses if every question is quickly reduced to categories of technics.

Going a step further, it is desirable that teachers do concentrated work in the foundations of education – anthropology, history, philosophy, psychology, and comparative education – subcategories of liberal education which question the logical and functional relevance of much of what goes on in other areas of teacher education as well as identifying the conditions in which teachers and schools operate in society and examining the relationships between technical expertise and political power and authority.

Without labouring the point, the foundations of education serve to strengthen the indetermination factor by questioning our traditional reactions and beliefs – our automatic social and political reflexes – showing that they are too often unreliable and contradictory in dealing with teaching/learning problems.

Finally, if teachers want to become relevant to educational policy making, they must find out what the other actors or players in the policy making game know or are doing well enough to have more than a rank amateur's view of things. Teachers, in other words, ought to be well informed and knowledgeable about the nuts-and-bolts of educational policy; they ought to be something like expert technicians in the educational policy sphere. If this were the case, it would no doubt earn teachers the respect among the other participants in the arena of educational policy, especially as the participants must consider the new world of science and technology. Teachers can be welcome participants in educational policy making if they show that they are capable of comprehending the information necessary to make informed, just decisions, especially when others are baffled by the mysteries of science and technology and the sordid perils of self-interest versus common interest. Policy decisions need a guiding intelligence for it is the *sine qua non* of modern corporate planning and performance.

In conclusion, an inevitable concomitant of this ambitious quest for professional autonomy in educational policy making is power. This means, of course, that any judgment about a teaching candidate should be based not only on the candidate's ability as a classroom technician, but on the candidate's virtuosity in teaching and a sure grasp of the knowledge base, as judged by those steeped in and knowledgeable about the technical and the indeterminate nature of teaching. Any advance in teacher autonomy, in other words, must accommodate itself to the fact of indeterminate virtuosity by viewing teacher education as an expression of human creativity, individuality, and sensibility, as well as an application of systematic technical knowledge. To establish an autonomous teaching profession, teachers must recognize that a high I/T ratio is fundamental to all professions, with the 'T' of teaching based on the liberal arts, the foundations of education, a study of educational policy, and the 'T' of science and technology.

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