

## **Teacher Education and the New Knowledge Environment**

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## Teacher Education and the New Knowledge Environment

There is a crisis in teacher education. This is a worldwide phenomenon, which is particularly acute in English speaking countries, but also France and Germany are seeing graduates shun the profession. There continues to be a shortage of recruits to teacher education courses in many countries and governments show a continuing reluctance to support teacher education programs. Even where young candidates are attracted to the profession they are leaving early with the Guardian reporting that in England 40% of new recruits leave the profession within the first 3 years. They are either discouraged by the regime of excessive surveillance or attracted to much more lucrative careers in the knowledge economy for which they are very well qualified; thanks to quality of their preparation for a teaching career. In Australia school leavers and many mature age applicants are attracted to teaching but governments and universities are not prepared to fund sufficient places to meet demand. On the other side of the equation universities and teacher educators are expressing concern as to the most effective way to prepare teachers for a transformed and uncertain future of knowledge creation and transmission.

This paper will consider the dynamics and scope of these issues, exploring some of the societal and epistemological changes shaping the direction of education policy and impacting on the role of the teaching profession.

The issues of teacher education and the status and recognition of the profession continue to be a puzzle. Despite continued reviews and calls for more recruits to address teacher shortages the response from governments particularly in Australia, and universities continues to be largely negative, at best tokenistic. There is a clear reluctance on the part of many Vice-Chancellors to adequately support teacher education and the education profession in general.

The professional environment that new teachers will enter is rapidly changing due to the confluence of a number disparate currents for change.

### **New Learning and New Knowledge**

Changes in knowledge itself, its modes of production and the modes of its transmission and use will drive changes in the understanding of teaching and teachers work. Much of this change will be facilitated by the development of new information and communications technologies; other change will be due to the consequences of economic development and social change. But further change will be due to changes in knowledge, its production, distribution and acquisition.

One powerful statement of how knowledge is changing and is likely to continue to change is found in the well known book published in 1994 *The New Production of Knowledge* written by a team headed by Michael Gibbons (Gibbons et al, 1994).

Gibbons and company characterise this new form of knowledge and knowledge production as Mode 2 knowledge. As such they distinguish it from the more familiar Mode 1 knowledge, which is the knowledge production characterised by traditional university research.

In summary:

**Mode 1** is characterised as being:

- Discipline based,
- Carries a distinction between pure (or fundamental) and applied,
- Normally produced by individuals
- Produced in universities or traditional research centres
- Subject to quality control by peer review
- Is inherently local or localised

**Mode 2** is characterised by knowledge that is:

- Produced in the context of application
- Transdisciplinary
- Heterogeneous in terms of the skills and experience brought to it,
- Produced in diverse sites
- Characterised by the production in teams
- Subject to social accountability and reflexivity
  - Subject to the quality control of market acceptability as well as peer review
  - Global or non-localised.

The epistemological bases of Mode 1 and Mode 2 are quite distinct. This feature is not discussed by Gibbons and friends in any depth and needs to be expounded to give more substance to the distinction.

Mode 1 knowledge is based on traditional notions of the objectivity of knowledge. These might be either rational or empirical in kind but in either case depend on the notion that knowledge must be based in some form of objective reality. It has traditionally been this base, which has given legitimacy to Mode 1 knowledge; validating it against the test of objective truth or correspondence with an objectively real world.

Challenges to the validation of these traditional forms of knowledge in the second half of the twentieth century have taken their toll to the point where researchers in many disciplines have now abandoned or rejected claims to objectivity and rely on postmodern conceptions based on interlinked relativities.

This postmodern epistemological approach, if it can be called that, underpins Mode 2 knowledge. But, I would propose, that much more realistically Mode 2 knowledge can be based on a distinct epistemology which derives from philosophical pragmatism. Pragmatism can be summarised as the theory that truth is determined by consensus amongst informed

practitioners. Pragmatism and its associated characteristics of a communicative basis for knowledge give strong support to Mode 2 knowledge without the necessity to resort to a full-blown postmodernism.

Mode 2 knowledge production and distribution is much more likely to typify ways of operating in the new knowledge industries than mode 1.

## Schools

Schools, as institutions for the transmission of knowledge, of course have an ancient history and in one form or another have been part of all ancient and recent civilisations. But, the school as we know it has its foundations firmly based in Mode 1. This is a clear historical and cultural reflection of the place of schooling in traditional cultural formation and maintenance.

The school that we are familiar with today is largely a development of the industrial age. Schools in Australia and most western countries developed out of the church (Christian) schools to become secular institutions. In this process many of the church schools were secularised, particularly in their curriculum, moving away from an emphasis on religious studies to more general studies of the skills related to industrial production. These were principally basic literacy and numeracy of the famous three "Rs" with some basic cultural knowledge required for citizenship of the day which usually included British and sometimes Australian history. In the late 19th Century school attendance also became compulsory. An undoubted benefit to the individuals who otherwise would have missed out but also a reflection of the industrial and cultural imperatives of the time.

Teachers in this system were regarded as special people and were most often individuals with particular qualities and ability. In a knowledge scarce environment teachers were amongst the few people in the population who possessed knowledge and to a greater, or often lesser degree, the skills to transmit it. They held social status, especially in small communities and often fulfilled many other community leadership roles, which required the exercise of the knowledge and communicative skills they possessed.

This is all familiar territory, not least because the underlying organisational principles and value structure of current schools and teachers still largely reflect this model. It is a model built very firmly on Mode 1 knowledge production and transmission. In this mode knowledge is seen as authoritative, and in some cases is actually authorised through mandated curricula. It is also concentrated in the person of the teacher and the site of the school. There is little room for recognition that there could be multiple sites of knowledge production, multiple modes of knowledge and multiple means of its distribution. In fact, in many cases the monopoly position of the school was used to discredit other forms of knowledge as mere superstition or unscientific folklore. In Australia aboriginal people have certainly suffered greatly from the devaluing of their knowledge even though it was understood that it was based on millennia of cultural continuity. Mode 1 knowledge tends to be mono- or a-cultural and if it has a global reach it is only from the standpoint of a single or abstracted culture.

All this is now rapidly changing. As Gibbons et al state Mode 1 knowledge still has a place and a legitimate role and will continue to do so. But, increasingly Mode 2 knowledge is becoming more widely established and all educational institutions, schools and universities, have been thrust into the situation of needing to adapt to rapid, fundamental and extensive change.

We now live in a knowledge rich environment with a great diversity of knowledge producers and an increasing diversity of knowledge media. Much more scientific and cultural knowledge is now produced outside universities and traditional research centres than within them. These institutions still have a key role in some aspects of research and in research training. They also have a key role in some aspects of the legitimation and critical evaluation of knowledge and have various complex implicit and explicit functions in policy areas.

Schools and schooling are now feeling the first stage of this dramatic change as they must respond to diverse and distributed sites of knowledge production and equally diverse channels of its communication and distribution. They will increasingly respond to Mode 2 knowledge production and distribution,

In a knowledge rich age schools cannot continue to be the exclusive or even necessarily the primary sites of learning. The places and modes of learning will increasingly become socially and geographically distributed. This is widely recognised by teachers and educators and is well reflected in the recent Australian Council of Deans of Education Charter *New Learning*. Yet much teacher education in Australia still proceeds on the premise that Mode 1 knowledge production and its associated distribution is the only legitimate form of knowledge production and distribution. This is reflected at many levels, in the expectation of parents, in societal expectations and in the minds of many teachers. But it is also reflected in the profession itself. A current example is the recently formed Victorian Institute of Teaching, whilst recognising the broader role of teachers in schools and the community has sought to codify the profession on restrictive grounds. A similar ambivalence is present in the generally excellent Senate report *A Class Act* which amongst its extensive recommendations, recommends the continued professionalisation of teaching, but along rather narrow lines.

The recent New South Wales Review of Teacher Education; *Quality Matters* reflects a broader perspective in that it recognises the complexity of the "new learning" and the demands this will place on teachers of the future.

The report notes with approval a recent Finnish report into teacher education which suggested that,

A most significant factor in the future of the school as an institution will be the importance it gives to the learning of teachers and the extent to which the school acts not as a monopoly but as a partner in the delivery of education. In such an environment it is likely that teaching will become a more dynamic and professionally rewarding activity than in learning environments which are structured traditionally and are defensive in the face of change. (Ramsey 2001, p22)

The report is of course very detailed but is highly critical of current practice in teacher education and even more critical of government support for it. It recommends both explicitly and implicitly the imperative for fundamental reform.

For instance in a blunt statement,

Teacher education cannot continue substantially within present models and structures. Reform is needed which reconnects teacher education and schools. The reform has to be at least as dramatic and government and employer driven as were the reforms in vocational educational arising from the so-called training reform agenda of the early 1990s.

Those subject to the training reform agenda might take issue here, but the strength of the statement is clear. Yet it does not go far enough as there is a need to connect with more than schools. There is a need to connect with the distributed sources of knowledge and the diverse media of its distribution.

### **Teacher Education**

What are the consequences for teacher education? How will it change in the new knowledge environment?

Teacher education should as always be guided by answers to the questions –Who are we educating? and What type of world are we educating them for? The difference is that there needs to be a whole new focus in answering these questions.

At the moment the response must be speculative to a degree as the changes to reason, knowledge and learning are still rapidly evolving. Some directions are becoming clearer but it is a characteristic of the new knowledge environment that much of the socially and personally useful knowledge of the future is not certain, nor predictable. We have entered a period of "meta-change". That is the ways in which change occurs is itself subject to rapid and unpredictable change. Further the process of rapid change carries with it the prospect of even greater uncertainty in the process of change. This will transform the way we think of all education, not just teacher education. But teacher education because of its inherent knowledge and personal leadership role will be critically involved. Teachers will have to be educated to deal with rapid and unpredictable change.

Another characteristic is that skills and personal identity will be characterised by flexibility, epistemic and cultural diversity and elective identities.

The knowledge and skills of teachers will have to be re-evaluated and change. Teacher's skills will have to be multi-layered, not just vertically and horizontally, but with a multi-dimensionality that includes different ways of knowing that include divergently different interests. They will also engage with different ways of being as traditional notions of the continuity of identity are replaced.

Teachers will have to become expert in understanding the processes of knowledge production and use. At one end of the "knowledge chain" they will be connecting their students with the sources of knowledge production and at the other with users of knowledge. Their expert critical reflexive capacity will be essential in the connecting process.

To reflect this change teacher education will have to encompass the role of the "knowledge worker"; both as the "teacher researcher" and the "teacher practitioner".

The abundance of knowledge and the rapid change in its currency will greatly diminish the importance of the teacher as knowledge resource but enhance the role as a knowledge manager. It will be much more important to know how and where knowledge is produced and how it is mediated and how it is used. Teacher education will have to lay the grounds for this new form of professional practice.

If teacher-researcher–practitioner is the way of the future then the issues of judgement and values will become more central. Teachers will be key professionals who can guide students to produce, mediate and use knowledge in a socially and personally useful way. And this is where future teacher professionalisation should be focussed. Teacher professionalism will increasingly be assured by the currency of life-long learning and the capacity to mediate the processes of understanding and personal development for the learner.

There will be multiple paths to teacher education, through universities, through workplaces and workplace learning. This will result in new models for the preparation of teachers. The clear message is that the current one or two modes of teacher education will be replaced by multiple modes. It is difficult to predict what they might be but some are already emerging such as increased partnership or apprenticeship models. There will be a more broadly defined skill and knowledge base with "global competencies" and communicative skills to the fore.

The role of content and discipline specific knowledge will be less important. The current concentration on key learning areas and discipline specific teacher preparation is rapidly becoming irrelevant and should be dropped. Whilst teachers must be knowledgeable, competent and responsible in their practice, the preparation of teachers must reflect the flexibility that the new environment will demand.

The new key areas will relate to understanding and operating in the new knowledge environment and will include, communicative competence, managing diversity, critical – reflexive capacity, ethical judgement. This now requires a radical change in way schools are structured and way in which teachers are prepared to work in them.

## References

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