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Testing times for teachers and teaching

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Testing times for teachers and teaching

The decreasing demand from better-performing school-leavers for courses in teacher education reflects lower respect for the profession of teaching as a whole.

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Changed employment opportunities have had a marked impact on the teaching profession. Within the past 50 years, career and study opportunities have changed dramatically and new professions have emerged from the introduction of new technologies.

For women, their participation in a range of professional career options has risen dramatically – once their options were limited to teaching, nursing and secretarial work, regardless of their ability.

Levitt and Dubner (2009, p 44)address this issue in a definitive statement: "In 1960, about 40 per cent of female teachers scored in the top quintile of IQ and other aptitude tests, with only eight per cent in the bottom. Twenty years later, fewer than half as many were in the top quintile, with more than twice as many in the bottom."

It is likely that similar trends apply to the male population entering teacher training, given also that the entrance scores required for a range of low-demand university courses have also reduced.

The period from 1980 to 2012 would likely show an escalation of the downward academic standard for teachers, with approximately half entering on the basis of their ATAR score. Very low ATAR (Australian Tertiary Admission Rank) scores are accepted by many institutions nationally; so low that the 'necessary' scores require failing at least three, if not four, of the student's 'best' subjects.

Given that many of these students are taking lower level courses (for example, English rather than Literature) and that many are taking no mathematics and science courses, their upper schooling pathway is a significant issue.

The decreasing demand from better-performing school-leavers for courses in teacher education also reflects lower respect for the profession of teaching as a whole. The factors affecting the standing of teaching are complex. However, there can be little doubt that publicly available information on entry standards for the profession bears a causal relationship.

The critical first step towards increasing the standing of the profession is to have mandatory testing for all graduates, requiring them to demonstrate competence in their key teaching areas. For example, all early childhood and primary teachers should be able to successfully complete a mathematics test to a Year 10 standard and English testing that includes spelling, grammar, reading comprehension, writing and, importantly, speaking and listening skills.

While this list of capabilities might be acceptable for early childhood and primary teaching it is clearly inadequate in recognising subject mastery in the disciplines and the more sophisticated demands in respect to presentation skills from adolescent students. Determining the dimensions of such testing is a challenge to the profession that must not be railroaded by the teachers' unions, nor the governments' bureaucracies.

The effect of having teachers unqualified for the tasks of teaching has significant ramification in efforts to remove inequities in learning opportunities. Too often, the weakest graduates end up teaching the neediest students, as they are less competitive in the employment market. In reality, we all know that the most disadvantaged students need the most skilled and capable teachers. No one can teach that which they do not know themselves, nor ensure that learning is well paced, linear and sequential, if the process itself is not understood.

It must be recognised that one of the important determinants of maintaining discipline in classrooms is the quality of the teaching.

In 2006 and 2007, a teaching project took one of us to a range of 'hard to staff' country schools to assist teachers with mathematics. The project benchmarked all the students in these schools with a thorough testing program to provide staff with an appreciation of their necessary starting point.

Many of the students were years behind their expected level due to a combination of high absenteeism, poor teaching and lack of family support for learning. Most concerning, however, were error patterns within student work and the apparent mathematical misconceptions that punctuated their testing, demonstrating that they had been mistaught concepts on which future learning would be dependent.

One whole class completed 'subtraction with regrouping' by subtracting the smaller number from the larger number, and every student interview revealed they'd been taught to do it this way. At interview, discussing the teacher's own skills with mathematics, an upper primary teacher said "I'm good when it's easy, like times tables, but I get lost after that".

The teacher was a mature age graduate with low academic results and poor practicum performance. The Principal acknowledged that the

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appointment was based solely on the person being the only applicant. It was little wonder the students were making such limited academic progress.

Had this teacher been required to pass a testing program prior to teacher registration they would never have been placed in front of a class. It remains true that the school really struggles to find teachers. The only realistic path to attack these problems is for the system to create real and tangible incentives to teach in low-demand positions.

While this example represents the worst-case scenario, there were significant numbers of practising teachers who lacked the very knowledge, skills and concepts they were employed to teach. There are countless examples of secondary teachers teaching in an area outside their competence and training range.

Again, a testing accreditation program would challenge school administrators not to simply create timetables based on gridlines and availability – they would have to place competent teachers within the subject and year of teaching. It would be the necessary assurance for parents and students that the teachers assigned to any class were in fact accredited to teach it.

Ridiculously, the current modus operandi is that a secondary teacher can be given responsibility for any subject, as the need dictates, when in reality their qualifications are usually specific to one or two learning areas.

Female teachers, particularly at the primary level, have carried the profession for many years, but as those bright, capable and dedicated women move towards retirement age, their replacements, regardless of gender, are not their equals. This places education systems and individual schools in an invidious position of disadvantage.

It will require that university preparation programs embed far more content, not just pedagogical skills, into units, particularly for early childhood and primary teaching courses. Those trained for secondary school positions must have studied their teaching areas through majors and minors, and have specialist knowledge in any subject they are asked to teach. It will also require national quality assurance systems, used in other countries, to create a rigorous standard for teacher accreditation and licensing.

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The bigger issue is how our nation makes teaching a more rewarding profession to attract the best and brightest to this noble career, particularly in the more challenging areas of teaching where teachers are in undersupply.

We propose that from the age at which students enter upper secondary schools, the best judges of a teacher's performance and the class environment are the students themselves. In most schools students want to learn and do well. They also expect their teachers to show leadership and to engage them with the subject area.

Other information exists within the school in the minds of peer teachers and parents. School Principals must be charged with bringing this information together by informally sampling all these sources of information.

But in schools working as parts of a system of schools, the freedom to use this anecdotal information is limited.

The two most critical elements on which a teacher can be reasonably judged are competence as a communicator and mastery of the material to be taught. The mastery of the teaching content can be easily assessed. It is essential that this assessment is formally done at all levels of teacher training and before any new assignment of duties. It is our experience that without this mastery of knowledge student interest in learning is lost and class discipline is problematic.

We reject the notion that if one is taught to teach, one can teach anything. The proviso is "only if the person has mastered the content". We are aware of a recent case where a very capable primary teacher was appointed as a school's music and Indonesian specialist, on a temporary assignment. In truth, she was appointed to sustain non-teaching duties for class teachers, but the parents were never informed of her lack of content knowledge. This is a blatant lack of integrity and yet it is far from a one-off case.

The effectiveness of a teacher or lecturer as a communicator is coupled, in the first instance, with a confidence that flows from mastery of content. However, there are many skills in the baskets of assets demanded by success as a teacher communicator that can be taught or developed if awareness

ATSE's STELR program professional development workshops aim to enhance teachers' skills in science teaching.

is created by example, practical demonstrations and through seeking feedback from colleagues and students.

A good communicator must be aware of the range of communication skills that are necessary components of successful teaching. No matter what the size of one's class, eye contact must be made with selected students all the time. How else is it possible to know whether you have lost your students and that a point must be repeated for reinforcement?

A teacher must use mobility and body and arm activity as a path to attracting attention and for emphasis, and voice intonation to remove boredom. Skilled teachers realise that reading text, except for uniquely important parts of an argument or in citing special short pieces of text, is very unwise, and that humour works but is best if spontaneous.

Clearly, any implementation of the requirements defined here will have major industrial repercussions and create very significant problems in the management of the existing teaching force. There must be a serious program of assessment of individual teachers' needs for the teaching areas in which they aspire to teach and significant investment in retraining.

The roles of the teachers' unions in these programs are critical. It is also necessary that the education bureaucracies take seriously the critical needs for replenishment in the teaching force and work to create new conditions of trust with their teachers during these processes.

This program will be costly and governments must admit to their neglect.

REFERENCES

Levitt, S. D., & Dubner, S. J. (2009). *Superfreakonomics: Global cooling, patriotic prostitutes, and why suicide bombers should buy life insurance.* New York: William Morrow.

EMERITUS PROFESSOR DON WATTS AM FTSE held a Personal Chair in Chemistry at the University of Western Australia before becoming Director of the WA Institute of Technology, Vice Chancellor of Curtin University and then Vice Chancellor of Bond University. He retired from the position of Executive Director of the Northern Territory Education and Training Authority in 1995 and since then has been an Emeritus Professor at the University of Notre Dame, Australia.

PROFESSOR KEITH MCNAUGHT is Director of the Academic Enabling and Support Centre on the Fremantle campus of the University of Notre Dame, Australia. He has taught in primary, secondary and tertiary education for 30 years and held various school leadership roles as both a Deputy Principal and Principal. Keith's doctorate was related to his passionate interest and involvement in mathematics education.

Engineering shortfall needs significant initiatives

A Senate Committee report shows that engineering supply is not meeting demand and that significant initiatives are required to address the problem, according to the Australian National Engineering Taskforce (ANET).

An ANET spokesperson said the report highlighted the detrimental impact on Australian business and the community of failures to systematically tackle the engineering skills shortage.

"Governments are challenged to get value for taxpayers' money when their own in-house engineering capability has been depleted, while the private sector faces the equally debilitating effects of having to compete for increasingly scarce engineering skills," he said.

"The problem is chronic," said ANET – which comprises the Australian Council of Engineering Deans, Engineers Australia, Consult Australia, the Association of Professional Engineers, Scientists and Managers Australia and ATSE.

"It shows that with increasing pressure from the resources sector we have limited ability to construct and maintain road, rail, electricity and water services cost-effectively. This means that taxpayers, business and communities in general will continue to pay too much for too little.

"It is also timely to be reminded of this problem in the midst of a public debate on productivity. Engineers are the creative professionals who find productive solutions to problems across all sectors of our economy. Without a fully fledged plan to rebuild our engineering workforce, sustainable productivity improvements will be impossible to find."

The Senate Education, Employment and Workplace Relations References Committee received more than 70 submissions and held hearings across the nation in its inquiry into *The shortage of engineering and related employment skills*.

Among its 12 recommendations were:

- that the Government consider creating senior technical engineering roles in the Australian Public Service to ensure that highly qualified technical engineers may continue to build upon specialist knowledge while enjoying career progression in the public sector;
- that the Government consider how it can encourage Commonwealth contractors to provide graduate and cadetship programs through its procurement processes;
- that the Government work with the Australian Workforce and Productivity Agency and employers to develop targeted policies that encourage women to remain in, or return to, the engineering workforce; and
- that the Government work with Australian Workforce and Productivity Agency to continue to develop targeted policies that encourage mature engineers to remain in or return to the workforce.

It also suggested the Government seeks recommendations from the Chief Scientist about how it can best continue to support the development of science, technology, engineering and mathematics courses and that it works through the Council of Australian Governments (COAG) to promote science, technology, engineering and maths ability in states and territories.

ANET welcomed the findings that more needed to be done to prepare students for a rewarding career in engineering by lifting participation in STEM subjects at school.

"The report is an important first step in turning around a chronic situation. Its findings are well founded. However, its recommendations need further development."

ANET called on the Government to take the findings of the report seriously and establish new methods to ensure Government investment in infrastructure was used to develop Australia's engineering workforce, lift retention rates and improve national productivity.