Submission

To

Senate Employment, Workplace Relations and Education Committee

Inquiry into the Academic Standards of School Education

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Transcript of meeting of committee secretariat staff with Professor Bill Louden, University of Western Australia, in Perth on 3 July 2007. This transcript is Professor Louden's submission to the school standards inquiry.

Secretariat—Perhaps it would be a good idea to start with what you think is important to highlight to us.

Dr Louden—I will just give you a five-minute burst, shall I?

Secretariat—Yes, in the usual way.

Dr Louden—The first thing to say is that—and you will have been told this by many people—standards in Australia are good if you use the international comparisons as the test. All the OECD work that Barry McGaw was responsible for, which you have no doubt heard about, every inquiry says that Australia is in the second bracket on most of the international comparisons, sometimes after Finland, sometimes Hong Kong and sometimes Singapore. If you treat Western Australia as a country rather than a state and compare Western Australia with Finland, in a number of the tests our average standard will be equal to that of Finland. So you cannot say that there is a terrible problem with standards compared with the United States, which languishes two-thirds of the way down any table, and only gets to half if you start including Nicaragua or something. So that is the first thing to be said.

The second thing that is always said, which I want to repeat, is that that average quality hides big differences in equity. In Western Australia Aboriginal children who live outside the city have terrible performance standards. They do not go to school and they are taught by teachers who are transitory who do not know them and do not understand their culture and so on.

Standards are good in general terms. Here in Western Australia they are best of all in the early years of schooling, where we consistently produce the best results—for example in reading—in the country in year 3. But I do not think we maintain that comparative advantage over time. At the other end of the school system, Australia, because it has strong examination systems in almost all the states, the students who are preparing for tertiary entrance, especially the top 15 or 20 per cent, are at a very high standard internationally. So our kids at 17½ when they enter the University of Western Australia have achieved standards that most American kids would have achieved after their first year of college, if they ever achieve them. That is the top group.

We do very well with small kids on literacy and high numbers of kids with basic reading skills. We do very well with the top third of the population. But where there are concerns about standards I think they are in the middle of schooling, in the wasted years all up, our primary and junior secondary. As a country we still struggle to work out what to do with kids who are full time at school at 17 and are not going to go to university. Schools are historically organised for children that age to be at university. Some schools have done better than others and some states have done better than others, but you would have to say that we have not worked through as a nation how to get the training, pre-employment side of things, working for kids who are old enough to drive cars and have incomes.

Our most successful high-fee independent schools—and we have six or seven of them between the river and the highway—do not have any trouble with those kids because they do not

have any. All their kids go to university, and most of them to this university. Those kids, for the purpose of schooling, almost pretend to remain children even though they have cars, mobile phones and independent lives and incomes, because they have a focus. They usually go to university. They trot along in uniform and submit to the rules of the schools. But kids who are not going somewhere will not submit to those kinds of childish rules, and schools have not worked out what to do with them. If there is a black hole it is in the bottom half of the population academically and year 12, and throughout for the bottom half of kids we just do not have it right anywhere beyond years 3 or 4.

In terms of standards, kids in the bottom quartile of mathematics performance at year 5 probably learn no more mathematics, although they do another five years of mathematics. Kids who are in the top quartile in year 5 mathematics—in the top five per cent particularly—become marvellously facile in mathematics, continue to learn every year and then go off to university and do university mathematics. But there are a lot of kids who are just marking time. The economy has no place for them, schools are not really organised for them and do not find them easy to teach. So that is where the standards problems are, I would have thought: in performance in the middle of schooling and for the weaker kids.

The other thing to be said about equity is that, as a consequence narrowly of federal government policy around interest-free loans for non-government schools and money following students from government systems into non-government systems, it has meant that the one per cent drift a year for the last 10 years from the government system into the private system has an effect that we call residualisation, that is, government schools become schools that are residual. They are for the kids whose parents are not organised enough and who do not have such a high valuing of education and the other kids get pulled out of it.

In working class neighbourhoods, where we used to have strong government schools that gave working class kids a terrific opportunity to get into tertiary education, many of those schools now struggle with an academic program because the kids who live in the neighbourhood do not go to the government school, they go to the local low fee Anglican school. Fees are only a couple of thousand dollars, but they have all the advantages of private schools, that is, the selection for caring about education.

I am sure that is an unintended consequence of federal policy but it is a serious one. More and more I worry about whether government schools such as Mt Druitt or Koondoola can manage to provide a decent program, because the able kids, the ambitious kids from working class neighbourhoods, have just gone next door, often on the same block of land, but when they get there they are wearing uniforms and doing home work. That makes it harder and harder to maintain high standards in the other school. So residualisation is a real problem and has the seeds of very serious social unrest over time. In Australia traditionally we have not had the dreadful sink schools that there are in the Midlands of Britain or in inner cities in the United States. We have not had schools where nobody is successful. The impact of residualisation is a matter of time. I am very gloomy about that. This has nothing to do with curriculum structures or any of that stuff. If you recognise that some families have benefited a great deal from education and some have good lives without education, naturally those who have benefited from education teach their children in many ways to make an effort at school.

We have this booming economy here. Lots of families have wonderful lives and they feel very successful, but it has nothing to do with the school. If their kids are all in the same schools and they are not leavened by groups of kids of ambitious parents who are really looking to change their family's life through the opportunities of education, that makes the schools harder to run. That is an unintended consequence but very serious. When I am talking to people at the top end of town in Perth about the 15-year or 20-year plan for the state, this is the bit that I know worries them. In running a mining company where you have to have lots of people living in Perth or Geraldton or somewhere, flying into Karratha or other inhospitable mining sites, people want to bring their families. Most people come from countries where you have government schools, not private schools. We have an unusually large private school sector. So they worry about whether they can get employees to come here, whether they will be able to get employees to come here if schools continue to drift apart.

When I was in high school there was no difference in academic standards between the high school I went to, which was a government school, and the high fee independent schools. There were other differences such as how much rowing you had, but now I think that is not true. We have only got a small group of government high schools that are genuinely competitive with high fee private schools. That is a problem, but not a problem for people who live around here because they just pay the fees. It is a problem for society because not everyone can afford it and not everyone—and this is the crucial point—sees the power of education to change their lives because you can work on a mine site and drive a truck. You can run the electrical fitting shop in Karratha and you can earn $200,000. So there is a problem there for education. There are some structural changes which are making it harder.

The other two things I want to say are that, in terms of the improvement or decline of standards, if you look at the literature about what makes a difference to improvement, it is never things to do with curriculum structures, curriculum frameworks and state-wide boards of studies. Those are regulatory agencies like the electricity regulator, really. I chair the curriculum council here. It is in a mess and we are fixing it up, but when we have fixed it we will not have improved education, we would have just got rid of that irritation for teachers of a system that does not work very well. Changing that does not drive improvement in schooling. What drives improvement in schooling are teachers, one by one. It is not even good schools, it is good teachers. Good schools are schools with lots of good teachers. It is teachers who have the largest variable impact. Half the variance in school performance is in the kid, a third of it is in the teacher that they have that year, 10 per cent of it year on year is in the social class background of the kid, and five or 10 per cent of it is in the school over and above the teacher.

If you want to improve standards, there might be all kinds of political reasons why it is handy to have a national board of studies or something, but if you want to improve standards you have to ask whether the quality of teachers is rising or falling and whether or not the morale of teachers is rising or falling. And of course the answer to those is not happy answers. This graph which I will show you comes out of the House of Representatives report. They did not do the graph, I did the graph, but you would be interested to see that that is most of the institutions across the bottom. These are the percentile rankings of new entrants to teacher education. This is the median percentile ranking score, this is the top 10 per cent and this is the bottom 10 per cent. There are some very large programs, of which the University of Victoria would be one, where the bottom 10 per cent are coming in with a TER of 50, which in Western Australia would mean that you failed all the subjects from which you were calculating your tertiary entrance rank.

In Western Australia 70 is there. That is getting 50 in four tertiary entrants subjects. All of those universities, average students are below that standard, but they are the average students. The quality of students who entered teaching via Monash, a big, quality institution, look how tightly they are grouped there. The difference between their most able and least able students is relatively small. They all passed four subjects, in my terms. That is the weakest ones. The best ones could have got into law anywhere except Sydney and Melbourne. They could not have got into law here either. Those students could get into law anywhere outside the group of eight, and could get into most faculties in most universities.

When you start thinking of the size of these institutions and multiply that by the standard, who are the big providers and what are their standards like, you would have to say that there is a problem. People my age are moving out of teaching. A lot of them are a bit older than me and getting out of teaching and they are not being replaced by people with the same success at school as themselves. People often talk about the problems in physics and mathematics and I do too, but underlying that the larger problem is that the genetic subsidy of women to teaching has been withdrawn. Women used to think they could not be lawyers. They are often not happy being lawyers either, but they used to think they could not be lawyers, that they could do nursing or teaching. The old bursary schemes that paid for working class people's higher education have been withdrawn, so there is no longer a kind of a working class intellectual subsidy into teaching. The women that teaching attracts are nothing like, on average, the same intellectual standard as those before.

That, to me, is the largest single problem in standards. It is not curriculum structures, it is nothing to do with what Kevin Donnelly thinks; that is just colour and movement. The underlying problem is that the social status of teaching has dropped dramatically. Every occupation that has been invented since 1970 is a graduate occupation and has gone into the occupational hierarchy above teaching. When I was a boy most accountants did not have degrees. Now the biggest faculty in every university is a commerce faculty, and they are all people who are expecting to earn more and have higher social status than teaching. The burgeoning of the university industry in Australia is actually about the creation of degreed occupations of a higher status than teaching.

That is an irreversible and serious problem which, when combined with the residualisation, makes it increasingly difficult to imagine that we can maintain the current levels of equity that we have, which is not fantastic but are better than the United States. We may well maintain the average quality, because the kids who go to good schools with able teachers, whose families have benefited from education, will work hard at school and will still be the best in the world, because they are. The external examination system really supports the development of high levels of perseverance, analytic ability and ability to deal with conceptual stuff. We will still have high quality, I would have thought, going out, but it will be bimodal. That is the problem is standards. That is my view. It is about teacher quality until we reverse this slide of quality of people entering the profession.

Secretariat—I have just a few questions following on from what you have been saying. You mention that in Western Australia the beginning readers actually achieve quite well. We heard some statistics from the education department yesterday. Then you say that the reading performance starts to drop off, and that is certainly what we heard. Is there any reason for this? If

they start reasonably well, why does the reading performance drop off as they go through primary school?

Dr Louden—There are some apparent drop-offs which are not drop-offs at all. That is, for example, the proportion of children who do not reach the year 7 benchmark is larger than the proportion who do not reach the year 3 benchmark. That is because the year 7 benchmark is harder, so it is an unfair test. You are reporting a single cut point. You have two distributions and the cut point is there in year 3; for the age distribution it is there in year 7. It is actually a bit of a harder comparison. The drop-off in the comparison score is not the point. My point is that Western Australia's performance versus New South Wales is better at year 3 than year 5—New South Wales is actually a bad example because they have done badly in that area just lately—versus the nation. Why is that? It is because this state invested very heavily for much of the 1990s in improvement of the skills of early years teachers. They ran a wonderful program which cost a motza called First Steps. It is my view, although I have no proof of this, that the long-term knock-on effect of spending all that money and being so persistent and so clear about what it was that teachers were supposed to do differently gave a burst of additional skill to teachers of younger children. Compared with the amount of money that has been put into early years literacy in Western Australia, the amount of money that has been put into the teachers of science in lower secondary school is laughable.

Secretariat—Throughout our hearings we have heard that early education is very important, but another related idea we have heard a lot of is that the phonics method in early education is especially successful. Would you agree with that, and to what extent has phonics formed part of the First Steps program?

Dr Louden—I have to say that my own empirical investigations into what early years teachers do in large-scale government funded projects has been that phonics is taught everywhere in early years classrooms in Australia. The difference is not whether people teach phonics, because after all phonics is talking about what are the sound and letter relationships. Let us just have a little thought experiment. How would you teach a five-year-old to read, paying no attention to letter-sound relationships? You would have nothing to do.

Secretariat—Is it the proportion of whole language—

Dr Louden—No, it is skill. If you ask educational psychologists, they will say that you have to apply this particular experimentally proven method. I would not agree with them. I am sure that when you conduct experiments you can prove that method A is slightly better than method B, but the point is that we do not have early years classrooms where there is no phonics being taught. But differentially we have phonics being taught—as we have with everything else—badly or well.

In a study I did for the Commonwealth government a couple of years ago we identified a couple of hundred teachers across Australia whose children learned more than other people's students and then went and looked at some of them. When we looked at the ones whose kids did not learn anything and compared them with those whose kids learned a lot, it was not whether they were teaching phonics or not, it was whether the phonics teaching was any good. In the case of a person that is in my mind, because I have a video of her, she was trying to teach six-year-olds about decoding and reading. She was mixing up from sentence to sentence the letter name

and the letter sound. This is disastrous for young children because you are trying to teach them that there are letter-sound relationships, not letter name and sound relationships. You do not spell with letter names. She should have been teaching them about the sounds, but she was confusing them by going from the sound 'kuh' to k—k is a letter name.

That is bad phonics teaching. We just saw some superb phonics teaching by people who are teaching in the context of whole texts but also paying great explicit moment by moment attention to letter-sound issues and pitching their sound teaching right to that kid and then to that kid who was a bit further on than that kid. For me it is not a matter of method A or method B, this is a faulty argument; it is the quality of how it is done. I do not attribute Western Australia's very good performance particularly to phonics. I do not think phonics is taught here any better or worst than elsewhere, but a lot of other things are taught better. I did an inquiry for the state government last year, and I am very interested in teachers here getting a bit more support around the phonics issues. For me, and I think I can demonstrate this empirically, it is not about whether you follow a method, it is whether you follow it well. Teaching is a skill activity, not a yes/no activity.

Secretariat—Would the response or lack of response to the National Inquiry into the Teaching of Literacy perhaps not have received as much support as one might think because, as you say, the really important point is the teaching rather than the method?

Dr Louden—I think that the lack of action is a mystery which could only be explained by within-cabinet interactions, the capacity of ministers to get their programs up. It could not be explained by anything rational or scientific. We did an inquiry and the inquiry was quite clear that we needed quite a lot of additional support in identifying early children who were likely to have difficulty. You can pick them, and that is the trouble. You get relatively few wrong picks and you get all the right picks at four. I can tell you at four years old whether this kid is going to have trouble. I might sometimes identify a couple of kids who later on would not have trouble, but I would get all the ones who are going to have trouble. So we recommended that there should be some early screening, and nothing has happened.

We recommended that teachers need support to improve the quality of their instruction around letters and sounds, and nothing has happened. This could only be because the Commonwealth department already spends a great deal on transfer payments to the states and was unwilling to change their priorities and unable to get additional funds. That is in the mysteries of politics. I was not very happy to have spent all that time and then find 18 months later that junior officials in DEST are whizzing around trying to claim that things they were already doing are as a result of the inquiry. Nothing has been done about the inquiry. You would have been told that elsewhere.

Secretariat—We have not met DEST yet. We will meet them next week.

Dr Louden—Watch out when you do because they will claim that some of things they were doing prior to the inquiry are as a result of the inquiry. They will tell you that the reading assistance voucher scheme, which is a dopey scheme, is a response. The reading assistance voucher scheme is just a thing where you get $700 worth of instruction if you are below this very low standard here, which is not the problem in Australia, it is getting everybody up. They

will tell you that that is a response of the inquiry, but it is 10 or 20 lessons, it is not a response to a kid who is having difficulty.

Secretariat—Why did your own government, the Western Australian government, or the education department here—I presume they have read that report—not simply take up some of the recommendations that were made?

Dr Louden—That is a good question for them, so it was a pity that I was not there at 9 o'clock yesterday. What the local state government did, following on that inquiry, was to commission a parallel local inquiry which I chaired. I have been encouraged by the minister to believe that the larger part of the recommendations that we made will be implemented, but that was finished before Christmas and it is now June, so I have not lost patience in the way I have kind of lost patience with the federal government's inactivity.

Secretariat—Yes. Do you see it as a coordinated effort by the Commonwealth and state or territory governments, or do you see one having more responsibility than the other and what kinds of responsibilities?

Dr Louden—It is a shared responsibility. The frustration for a person in my position is that I regard this as a serious long-term ongoing problem which is not capable of solution, because what you are saying is that you want everyone to learn to read well. If you have got every single person reading okay then you would still have a problem, which is whether they are reading well enough. Are they the best in the world or just nearly the best in the world? The problem never goes away. There is always a kid at that school over the top of the hill there who needs more and there is always a teacher whose skills we could improve. The problem never goes away, but successive ministers of education ride in, make a fuss, run down the public image of a profession, spend nothing, and go off to Defence. That is my concern. We are engaged in serious long-term business here, and then there are these trivialisation headlines and then no action. That is very irritating.

Secretariat—Can I just broaden that out a little bit. We had a couple of comments yesterday about excessive degrees of accountability because the money is coming in in buckets from various places. I was just wondering if you had any comments on the effect of state-Commonwealth bickering on program funding and whether you would agree with one of our academics who appeared yesterday who said that really the kids are the sufferers caught in between in this kind of war which is being fought between the Commonwealth and states, even if it is at a fairly trivial level which you described.

Dr Louden—Yes, I think it is a problem. For example, local teachers are struggling trying to find a way to match the federal government's desire to have every children get an A, B, C or D, which is a funding contingent issue for the state government. The state government does not believe in it. The officials you spoke to yesterday do not believe it in. So they have very highly elaborate ways of generating marks which then get converted. My view, as it happens, is that the federal minister was right to pick out talking to parents that they found that our Australian reporting system is obtuse. They could not figure out what they meant and they were full of words and words. The community view was to just give them a mark. I do not disapprove of the policy the federal government has particularly, I think it is more sensible than the state, but the mess is a serious mess.

The thing about accountability is that rank and file teachers are very restless about it. I think they are essentially on the wrong side of history. This is a large publicly funded activity. The only way to encourage people to continue to maintain the budget share against health and welfare and safety and other budget issues is to be able to say to the community, 'We do very well here.' So there is a burden of accountability which cannot be shirked. Sometimes when teachers are complaining about accountability they are just not wanting to buy into stuff because it is an issue that their bosses should be worrying about, and I think their bosses are right to worry about it.

Sharon O'Neill's problem is whether at the next budget she is going to get the next increase or are the cops. That is her big problem of the year. Is it going to health or is it going to education? I think it is irretrievable that we need to focus. But the trouble is that. because it has become a low level shock jock talking to taxi driver level kind of issue, there has been a bit of collateral damage.

Secretariat—Can we move on to another area that the senators were asking a lot of witnesses about. That was in relation to the uncluttering of the curriculum and how possible it was. We heard some evidence recently that we have too many key learning areas and that, because we are spending quite a lot of time on literacy and numeracy in primary schools, some of the key learning areas were becoming a bit redundant and left out, particularly LOTE or some of these others. Do you have any views on the cluttered curriculum?

Dr Louden—I do. I think it is a real problem for curriculum people. Single-issue people outside schools are always wanting to add something and make it compulsory. Yesterday morning I spent this hour talking to the deputy vice chancellor of the university, who is the chair of the national music inquiry. She wanted to know whether making things compulsory in music would improve music education in Australian primary schools. I had to say that I do not think so. But she is sitting on top of this inquiry and was about to recommend to the government that more music be made compulsory. It is very crowded, and saying that you have to have another 40 minutes of music will not do much for music in the way that improving the music teaching skills of a couple of people in every school would have an effect. If they knew more about teaching music, there would be more music taught; if they had more choral singing skills then they would do more choral singing. So people keep focusing on making this compulsory, let us add 30 minutes for this. I think music is very important and I think bike education is very important, but we are always having bike education or something added to the curriculum.

What needs to happen is quite simple. You need to think: if that is year 12 and that is P, you just need to see the curriculum as like that. The older you get, the more important it is that you have skilful teaching at breadth. The younger you are, the more important it is that—if you are in P it is all about literacy, if you are in year 3 it is about literacy and numeracy. If you are in year 5 it is about science, if you are in year 7 it is about science and social studies and literacy. There is a build-up. There is depth and there is breadth, but the trouble is that the tidy minds of curriculum people keep doing this. Then the poor person down the bottom of the food chain thinks that because we have a KLA called science that I should be doing some science in year 1. I am happy if they do some science, but I do not want the science time taken out of mathematics.

Can you see the way the problem manifests itself? It is not that this is not an important KLA, but people overprescribe. What you should be prescribing is very close monitoring of predictions

of individual children's likely performance here one by one, and whether they have actually reached that standard by here on the graph in literacy and here in numeracy, and leave the rest to general advice.

Secretariat—Just one thing that came out of left field the other day was a reference I heard, and I do not know where it came from, it was some research or perhaps to an assumption that states which have seven years of primary school and five years of secondary school were not providing as many opportunities for kids as those which had a six-six arrangement. Then to my surprise yesterday we heard that the Catholic Education Office in Western Australia is going over to a six-six arrangement. I was not aware of any debate on this changeover in WA.

Dr Louden—There has been debate about it, and the trajectory of the debate is that the recent couple of Liberal federal government's justifications for intervention in schools has been often about the fact that there has been so much national movement that it is unfair when you go from one state to another. This is actually a nonsense argument. I know that 10 per cent of students move every year, but it has been like that forever. It is not a first order issue and most kids manage the problem, but it has given an excuse for intervention, tidying up and making everything the same.

There is an empirical test here, and you would have had the data presented to you. Is it true that the two states whose kids have seven years of primary school have worse results in year 9 in mathematics? That is the end of the argument. It is perfectly straightforward. Queensland and Western Australia have different arrangements. They probably could easily have other arrangements, but why would you spend a huge amount of money on tidying up the anomaly if there is no obvious impact in school performance. There is no impact in school performance. You would have to show me that kids are doing worse in year 9 mathematics before I would be interested in the argument.

Secretariat—Just following on from length of school years, another idea which was presented to the committee yesterday afternoon was whether we should possibly consider a year 13 because there were so many basic skills, particularly in physics, the sciences, mathematics disciplines, that were not inherent in students matriculating to university. What would your thoughts be on an additional year for secondary schools?

Dr Louden—I think it is a perfectly good example of a structural solution which would cost a great deal of money and that it is very easy for a person outside the system to say would solve the problem, and it would have no effect except it would increase the cost of school education by one thirteenth or perhaps more because it is very expensive. Ontario has had the year 13, but they just abandoned it after many years. What can I say? Some countries such as Singapore, England and Scotland are very fond of their A levels. Those kids reach a very high standard in three subjects by having effectively year 13. Good luck to them, and it is a terrific way of organising your life, but I would need to be persuaded that the average standards of undergraduates in countries that have A levels are superior to similar students in Australia. I do not think there is any evidence of that. Our bright kids do very well. We have a highly internationally competitive year 12 system principally because we have strong external examinations and we have viciously competitive university entrance. So what does that produce? It produces students who have to master content and who try very hard. That is what standards is about: hard stuff and trying hard. That is where the argument is.

So, yes, it would be terrific for physics people in university if those students had another year of physics before they had to start teaching them, but the larger problem is not another year of schooling, it is whether we have any teachers teaching year 12 physics who have an honours degree in physics. No, not unless they are over 50. We have a whole lot of former phys ed teachers with biology degrees being dragged into teaching physics because there is no physics teacher. So where is the underlying problem? The underlying problem is in teacher quality and the attraction of teaching as a profession. That is hard to solve. It is a never-ending problem. It would be harder to track your performance. It is very easy to get up to the whiteboard and say, 'Let's have another year of schooling.' It is not going to solve the problem. What a physicist wants is someone to teach his kids physics who knows some physics. We do not have enough people teaching physics of the quality of the people who used to teach physics. I was taught mathematics at school by people who were mathematicians who were very good at school, who had maths degrees from Cambridge. This has gone.

Secretariat—This leads into the question I wanted to ask yesterday but did not have an opportunity to ask, which was about collaboration between departmental disciplines and education departments within the universities. Quite simply it was said that there was not enough collaboration, which means that you have teachers being prepared in education courses without the proper information to actually go out and teach the subjects. Do you think that that is a fair comment, and is there more scope for university collaboration in order to better prepare teachers for specific subject teaching?

Dr Louden—I will come back to my graph. I do not think that a lot of collaboration between physics departments and the education department is going to solve that problem. The underlying problem is the quality of people entering the profession. This is a small department in an academically elite university. Our students who enter teacher education from school have a median TER of 92. So when we get them out of their history degree they know a bit about history and often have an honours degree in history. So we could go and collaborate our heads off, but the underlying issue is quality.

Secretariat—I do not think that was quite the point with the BA Dip Eds, the BSc Dip Eds, it was more the people who are doing undergraduate BEd courses who spend most of their time doing educational theory and practice but who lack a sufficient basis, so it is claimed, of specific disciplines. The idea is that there is no-one in the faculty who knows anything about mathematics. They might know about mathematics teaching theory but they do not know any maths. So a lot of these people are going into primary schools with insufficient grounding of mathematics in order to improve teaching.

Dr Louden—I am going to be dogged about this. It is not about coordination, it is about quality. One of the things about selection of primary teaching as an occupation is that there is a genetic selection against mathematics ability. People who can do maths do not choose to become primary teachers. To put it in its negative form, one of the reasons you choose to be a primary teacher rather than do a commerce degree is that you are going to have to do two units of first year mathematics in a commerce degree. So there is actually a selection against mathematical ability into primary teaching. That has a larger effect than whether there is anybody in the department who can teach maths.

What we are used to seeing in those combined degrees taught by educational faculties is early tests of numeracy showing that many, many of the students—a very large proportion of students—cannot do grade 5 maths because they never learned a lot of maths at school, and they became primary teachers because it is something you can do without being any good at maths. That is the underlying problem. It is true that people in high status universities will be inclined to look at people in low status universities and say, 'Your degree structure would be better if you had a bit more discipline knowledge.' I am sympathetic to that view, but I do not think that that is the underlying problem. The underlying problem is international. They have the same problem in the UK. People choosing to be primary teachers are choosing to do it partly because they are not good at maths. It is not trivial; it is a selection effect which could only be changed if we were to change our selection environment to require people to be good at maths. With the current pay, conditions, status and morale of teaching, that would just mean there were no teachers. This is a bit hard to fix. When people set out to improve mathematics teaching in primary schools—we have a very good program in Western Australia called First Steps in Mathematics—and if you look at the content of the professional development for teachers, the great bulk of it is trying to teach the teachers some mathematics so that they can teach the children.

Secretariat—That is all done as professional development?

Dr Louden—Yes, it is done as professional development. Once a person has got some teaching skills and then finds they are having trouble teaching mathematics you try to improve their own understanding. You get people teaching primary mathematics who do not know that if you divide by a quarter, you get a larger number than you started with, or if you multiply these two fractions they cannot guess whether it is going to be larger or smaller. They do not have any number sense as they were never any good at maths. These are fine people. My children are a bit like that as well, which is very sad. But that is why mathematics teaching in primary schools is no good. It is because people do not have any mathematics. The easy solution is to say that they should take two units of maths, but in fact it is a selection thing.

Secretariat—That is a good answer. At least it explains the phenomenon. We have not heard that before.

Dr Louden—The world is full of simple wrong explanations. Physics would be better if we had another year of physics. That might be true. Primary schools would be better if we had another year of high school.

Secretariat—Let me ask you something else. We have heard quite a lot about year 12 exams and the final matriculation tests and that sort of thing, and the idea of moving towards some kind of nationally comparable system across the country. Again we come back to our mathematicians in Queensland, who say that when they get New South Wales first year undergraduates into their class they sail through but a great proportion of the students from Queensland are struggling. They put this down to the fact that, although there is great commonality in the content of curriculum at that level of maths across the country, a lot of it is not taught in Queensland schools for various reasons, which I cannot always remember. It has been suggested that this could be cleared up simply by having some sort of common examination or comparable examination across the country. What are your views on that?

Dr Louden—It is an interesting observation. My explanation would be that Queensland is the only state in Australia without a strong external examination system.

Secretariat—And the ACT.

Dr Louden—The ACT is not a state. The ACT is different because there is a genetic subsidy in the ACT so kids do all right. It is always the top jurisdiction in any test because there is not the same long trailing tail of kids in Western Sydney. They are probably right, but partly right for the wrong reason, that Queensland teachers love their internal examination system and the department loves it, but nobody who runs a certification authority in any of the other states is rushing to do what Queensland does, because there is a powerful effect of external examinations on kids, the intensity of effort. As a parent of a kid in year 12 in New South Wales you hate the HSC year. It is painful and people organise their lives around not being overseas when their kids have got that year, women drop off to half time work, and there are all sorts of things around supporting kids through the examination. But look at the other side of it. Why is that? That is because kids are trying very hard for a high stakes examination. The able kids are studying very hard and they put other things on hold. They see their boyfriends less often and stay up all night. They are willingly giving up on that and they like it, and good luck to them, but we are not.

So that is a separate issue from whether there should be a single national examination. It is an interesting observation and I am not surprised, because mathematics is about practice and getting through exams is about instantly knowing how to do it, so naturally the teachers make you practise a lot. Therefore you have automaticity, you can do things automatically, and you do not have to think about them. Whereas if you have an assessment at school in a non-examination system you do not have to be automatic, you can take your time and polish it up. Examinations are important. The national system is essentially a different question which I am prepared to answer, but I can explain that phenomenon differently.

Secretariat—That was the way it was presented to us, although I think at the back of it was the notion that Queensland was basically slackening off in comparison with the rest of the country. I would have to say in relation to the ACT, where I taught for a number of years, that there was not all that much slackening off either during the time, but we were still teaching the modifications of the New South Wales HSC at that time, elements of it and the curriculum and that sort of thing.

I would be interested in your views about some sort of common test at the end of year 12, or if not a common test at least something which was organised perhaps at a national or federal kind of level, a MCEETYA level, where there was some comparability of format or subject.

Dr Louden—Once again I would say that this is an example of a piece of low hanging policy fruit. It is easy to focus on this as a solution to the problem, but the underlying problem is that we are not recruiting teachers of high academic standards. Provided you allow me to start every sentence by naming what the problem is—it is indefensible that we have eight different physics examinations in year 12. It is dopey. Physics is a highly stable body of knowledge. Much of what is in physics has been known for about 100 years. Not much of what has been discovered in the last 100 years is in any physics syllabuses I have seen. It is the same in every state. Physics does not change when you cross the Murray River. With all those arguments, I cannot see why we do not have a common physics examination and common physics curriculum. There are some

definite benefits for that. If you have all the physics kids in the country doing the same syllabus you will have better text books, there will be good competing alternative text books, there will be a market for exams, assignments and teaching materials which is national, so generally that will support the quality of teaching if everyone is on the same syllabus.

The arguments against the single national syllabuses and examinations that will be offered to you by the states are, 'Ah, but our state is very different.' The response to that has to be that the differences within the states are greater than the differences between the states on any of these matters. Yes, it is true that we have lots of Aboriginal kids in Western Australia who live at Oombulgurri and Kalumbaroo and all those places, but so do Queensland and New South Wales, though Victoria does not. The difference within Western Australia is as great as New South Wales and it is the same trajectory of difference. There are small differences in content, but the notorious examples people give you are: why should Western Australian children learn about Blaxland, Lawson and Wentworth? Maybe they do not, but they do need to learn about how white people had to struggle with the idea of the interior of Australia. In Western Australia you might talk about what Ensign Dale did, but it is the same historical problem. The arguments against common stuff at the end of year 12 are weak arguments, but that does not mean it is a high priority reform program for me. High priority is the teacher issue.

Secretariat—What we have done is canvass the most contentious issues or the issues which seem to concern senators and we have directed these to you. I do not think that there is very much else that we need to talk about. We are particularly interested in teacher education because teacher education seems to be something which interests the committee a lot. We are tending to think that that may be a weak link. You think that the issue is rather more fundamental than that.

Dr Louden—We have had 101 inquiries into teacher education in Australia since 1979. The House of Representatives report listed 100 in its appendix. It is not an uninquired into problem. One teacher education program I know went from 210 academic staff in teacher education and 3,500 students to 70 staff and 4,500 students. Do you think they did that because they thought having fewer people around made the tearoom easier to manage? No. It was because their funding was halved in real terms in 15 years. In the universities everyone is always whining about this and no-one wants to hear a Dean of Education whining about funding for teacher education, but that is actually true.

You cannot separate the impact on teacher education of the massification of higher education from its outcomes. The senators will be interested, but my advice to them would be to increase the cluster weighting to teacher education so that it is the same as nursing. That would be a start. That is a simple solution for you. Just fund it. Just restore a quarter of the lost funding.

Secretariat—Thank you again for talking to us. We will get you a copy of this transcript. You might want to have a look at it.

Dr Louden—It has been a pleasure.