

CORRECTED VERSION

EDUCATION AND TRAINING COMMITTEE

Inquiry into the education of gifted and talented students

Melbourne — 12 September 2011

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Mr P. Corkill, Principal, John Monash Science School.

The CHAIR — Thank you for appearing before the committee. To give you background as to how we will be conducting today's hearings, firstly, everything we do is recorded by Hansard, and we will be using today's evidence to assist us in developing a series of recommendations to look at gifted and talented students and how we can support programs for them. Those are the terms of reference we have been given as the Education and Training Committee. I also need to point out to you that any evidence given to today's hearing is covered by parliamentary privilege. You are afforded the same parliamentary privilege as we are as members of Parliament. You can say what you like. But anything you say outside of the room is not covered by the same parliamentary privilege. What we tend to do is give you an opportunity to make an opening statement and then we get straight into the Q and A.

Mr CORKILL — I thought I would begin by thanking you for the opportunity to come in and by describing a bit about John Monash Science School, because we are a very new organisation. We have only been on the educational landscape in Victoria for a year and nine months. We are quite young. John Monash Science School is Victoria's first specialist school in science, mathematics and associated technologies. The vision for John Monash was basically developed at Monash University in about 2001 by three academics who approached the government with the idea of setting up a specialist science school at Monash. I cannot tell you much about what took place between then and 2007, but eventually it was funded and went to planning.

I joined at the end of 2008. I began work there in 2009. I was principal at Cheltenham Secondary College before. In the middle of 2009 I was joined by two assistant principals and a business manager, and we spent the rest of the year getting it set up. We had an enormous task. We had to develop the curriculum. We had to answer the question, 'What does the curriculum look like in a specialist science school as opposed to a normal school?'. We had to oversee the building. We had to appoint the staff. We had to find a way to get the students and get us up on our feet.

We began in January 2010 with 191 year 10 students. We did not begin in our building proper. We were in the university, which was fantastic, but our neighbours would have run out of space by early March had we not been able to co-use the building. We now have 420 year 10 and year 11 students. They come from over 120 schools across Victoria. We have no international students; they are all Victorian-based kids. There is a very diverse ethnic mix and a roughly 50-50 gender balance, and 40 per cent come out of the non-government system. It is quite a diverse population of kids.

It is a very innovative place. Teaching happens in open-plan learning spaces and is delivered by teams of teachers. The curriculum is quite different, certainly in year 10. It is an exciting place to be. As I have described it to several colleagues, I have been in education for 30 years, and this is without a doubt the most exciting project I have ever been involved in. It is a great job.

The CHAIR — Thank you very much. It sounds exciting. We will get straight into the questions. Firstly, with the sorts of numbers that you have, which are obviously growing, how do gifted and talented students and their parents find out about the specialist program at John Monash Science School?

Mr CORKILL — Good question. I think a lot of what happens now is word of mouth, but in our first year we advertised very widely in the Leader newspapers, in the *Age* and in the *Herald Sun*. Our budget for that is fast decreasing, as it has been overtaken by the interest shown in the school. We run a major information night in May, and people sign up to go through the entry process. I do not want to pre-empt your questions, but you are probably interested to know how they get in.

The CHAIR — Yes; that was my next question.

Mr CORKILL — That is by and large how people find out about the school. When we advertise teaching positions we get a big field of applicants. The school is certainly getting better known. I think in truth it is one of Victoria's best kept secrets. We have not had much press about the school since we have opened. None of that bothers me, but we seem to have grown and developed on the back of the work we are doing, and word of mouth spreads in the education community. Students who have come to us from the other schools have certainly talked to their friends and relatives, and that has built momentum. I think it is a combination of those factors.

We do not deliberately target any student groups. We just take the group that come. To give you an idea of interest, which I reckon is one of the minor miracles of this school, we actually got 350 students to register for

entry in our first year for year 10. Remember when they registered there was a concrete slab to look at and four people to talk to. Those that were brave started as a cohort. That cohort numbers around 220 now; we took some more into year 11. We had 700 applications for places in year 10 this year, so it is becoming quite a significant option for parents. I will keep going with the entry procedures if you like.

The CHAIR — If you can, go on with the application process, and when you are referring to that can you also describe potential versus results and how you look at that?

Mr CORKILL — Absolutely. We use the same group that handle the entry procedures for the other selective entry schools, but it is significantly different. I cannot pretend it was not significantly different in 2009, because when you are an army of one and you are looking to get 200 kids you have to go for the easiest ways forward. They offer a process that I could not begin to do personally or with a small group of people.

What the entry procedure looks like now is that there are a series of written assessments around science aptitude, science interest, mathematical reasoning, numeracy, basic literacy and those sorts of things. After all the students do that we put 400 students through an intensive process, which is a series of activities designed to demonstrate their skills in problem solving, their ability to collaborate and their ability to think creatively. That finishes with a one-to-one interview. We found that the cold interviews of the two previous years were far less successful than this process. By the time they get to the one-to-one interview they are ready to tell you all about the previous half-hour, and they are very excited. It was a big surprise for them.

Since this is under parliamentary privilege I will say there are a lot of companies out there that market themselves on tutoring kids and getting them ready for schools like us, and we need to stay one step ahead of them. That is not the reason for this process that we put in place, because I do not think you can train for it, but we do really want to capture the kids who have genuine passion for science and can demonstrate that in some tangible way. I had one boy who was trying to tell me about his passion for technology, and he said, 'I have never used a computer that I haven't built myself'. I thought, 'Okay. There is a kid who should probably come here'. There are lots of students who can really demonstrate their love of science and mathematics, and that passion starts from a very young age. We are really lucky to have the kids that we do.

We are also capped. We were not initially. There was no cap put on John Monash in the first year. I suspect that was just to guarantee a cohort. I am really glad it did not have an overrepresentation from any one school. It could have been a disaster for us, particularly with some of the big neighbouring schools, but it did not turn out that way. Since we have been able to manage under the 3 per cent cap, I understand all of the sensitivities that go with admitting kids to a school like this, because I was a neighbouring principal and thinking very differently. I get that. I think the ground has significantly shifted for me. We really are different to Melbourne High School and others. We offer a genuinely different pathway in science, and the work that we do with the university is cutting edge and significant and it creates a very different experience for kids. That is very different to other schools.

The other thing that sets us apart is that we have begun to put back into the system and build capacity in the system so other schools can also do this sort of work with kids who are genuinely interested in science. I can talk to you about those if you are interested.

The CHAIR — We may as well do that now; that is fine.

Mr CORKILL — There are two things we are doing. A number of our year 10 students came to me and said, 'Why don't we do something with local primary schools?'. So we now have 20 students out of the Monash network of primary schools and 20 students out of the Waverley network coming to us every second week — Waverley one week, Monash the next, then Waverley, then Monash. Our year 10 students plus our teachers work with them on Wednesday afternoons and they have based the theme around energy, so they are doing lots of hands-on things with the kids. The teachers and the kids are just buzzing. It is really exciting for them, because I think it is probably no surprise to anyone that science is a bit impoverished in primary schools and that is for a number of reasons. That has been great. It has been fantastic for the neighbours, it has been fantastic for our kids and it is great for us to be involved in that. Those students will each produce a little project, and they will present that in our big science fair on October 25. That has been good.

The major initiative that we launched this year was we hosted 20 kids — and I suppose you could say they were gifted and talented; they are certainly very clever kids — from remote Victoria. We hosted them for five weeks

at our school. I managed to cobble together a bit of funding to enable us to sustain that for five weeks. We found 20 families in our communities that were good enough to host these kids. They travelled down from places as far away as Werrimull. We had a boy there who used to fly down every Sunday and fly home on Thursday night. He wanted to be a lawyer when he came and he now wants to be a physicist. There was no social engineering there. He was just generally interested in what we were doing. They were immersed in our program for five weeks.

In year 10 we offer a range of electives that you cannot do anywhere else — nanotechnology, marine science, bioinformatics, pharmaceutical science and astrophysics. All of the students are involved in at least one of those, and now that they are back in their schools we are managing to correspond with the teachers and the kids through the ultranet. The teachers are picking up elements of those units and doing them with their own kids back home. These students are completing a project with the same theme as our students and will be part of our science fair in October. We see the potential of outreach through that simple idea enormous. We have recently got some funding from Schools First, the NAB initiative, and what we want to target there is that we want to work with schools that have lots of kids from low SES backgrounds and bring them and their teachers into the school to work with us, with an idea of building capacity there. We are serious about our stated mission to work a bit more widely than just catering to the kids who come to the school.

So those are some of the things that we are doing at the moment. To continue those we are going to need to be clear about how we resource them, because we have cobbled together what we can to run them. My vision is that they will become so good that someone will pick us up and say, 'Right, here's a few bob to keep running it'.

The CHAIR — Just quickly, the 20 students at the primary schools that you support locally, are they identified as gifted students?

Mr CORKILL — I leave that to the schools. They are identified as students who are genuinely passionate about science and quite clever. If you want to tag them as 'gifted', I cannot, hand on heart, say that they are, but their schools, the principals and teachers, are involved in that process. Each of five schools choose four students each in grade 5 to come.

Ms MILLER — Are they neighbouring schools to Clayton or are they throughout Melbourne?

Mr CORKILL — The Monash schools are. Waverley is a bit further out, by the time you get to places like Highvale, Vermont and places like that when you get out there. It is a little bit further away, but the Monash schools are pretty close to us. They are close-ish.

Ms TIERNEY — I think you have answered a lot of my questions, but I congratulate you on the interventions you are making in a proactive way to ensure that there is the possibility of greater representation of those students who come from disadvantaged backgrounds, whether that be economic remoteness or regional and rural students. I think that is fantastic. Is there anything that you have been thinking about or actually doing in terms of trying to get more indigenous students into the program?

Mr CORKILL — We have an indigenous student with us. He came to us from the [REDACTED]. He is just a fantastic kid and he is doing beautifully. I took a personal interest in him — his name is [REDACTED] — and the way it has all gone is that because we started with such a small staff I mentored him. I got [REDACTED] into the Learn Earn Legend! program at the Australian Parliament House last year. So we both went up to Canberra. I do not know if you are familiar with that program. It is under the Dare to Lead umbrella. He was with Richard Marles for a few days with 100 indigenous students who have been earmarked as future leaders.

When he first came to us, [REDACTED] ambition, even though he loves math and he enjoys science, was that he wanted to be a mechanic. Now we have him very interested in a career in mining. The significant deficit in his learning is around literacy. We employ a retired teacher to work with him every week. He also has a tutor in physics. A lot of the staff, including myself, help out with his maths. His life is very different now. When I was in Canberra I spoke to some of the heavy hitters up there around how you get more indigenous kids to apply. It is not that our selection procedures would keep them out; it is just that I have got to get them to apply. We have a statement that says that everyone has to go through the same procedure to get in. The work, I suspect, is first of all in making them aware of the school and then in encouraging them to apply.

Ms TIERNEY — But you are doing even more than that; you are providing a taste as well.

Mr CORKILL — Absolutely. In Canberra I met a number of principals from private schools. I heard the previous gentlemen talk about the scholarships that they offer and bringing students in from all over Australia. We would love a piece of that sort of action. It is just a matter, I suppose, of us being so young. My first and foremost duty is to create the very best school we can with the resources we have and with a track record where we encourage people to say, 'This is a good place for my kid who loves science'. Our policy around selection includes a measure — around 10 per cent — of indigenous and low-SES kids. Eleven per cent of our year 10 cohort alone receives the EMA, and so we are managing to encourage these people to come to school. We scramble to find whatever resources we can to support them at the school. We have managed to get some help with that, which is fantastic. I would love for that to continue.

As far as getting more indigenous students into the school, we are members of Dare to Lead and we have a Wannik coordinator who works with the school, and they are fully aware of what we do. and myself will be back here on Friday afternoon because he has won a scholarship. That will be a really proud moment for us and for him to be presented with that on Friday afternoon in Parliament House. His mum and dad are coming.

The CHAIR — Fantastic.

Mr CORKILL — To bridge the gap to achieve what you want — I would be in full agreement with that. It is about finding a way to make us better known in the communities that need to know about us.

Ms MILLER — My question was going to be about identifying students who are maybe not as strong in some areas and better in others, and from what you have just said, you bring people in to bridge that gap. Is that right?

Mr CORKILL — Yes, we do for [REDACTED], and we do bring a number of tutors in to help with things like maths. That is one of the beauties of being on the university campus. I have worked in a few government schools, so some of my ex-students are actually in the third and fourth years, tutoring our kids. It works really well.

Ms MILLER — The committee has been told that that gifted and talented students have often heightened emotional needs and sensitivities. Do you agree with this, and how does your school support the emotional welfare needs of gifted and talented students?

Mr CORKILL — Yes, I think I would agree with that. I would also make the really strong point that some of that comes from expectations of their parents, which I think in some representative ethnic groups in the community is really high.

What we have at school is a traditional house structure. I have an assistant principal in charge of the house structure. There are four houses all named after prominent Australian scientists — that would be no surprise to anyone — and each house has about eight tutor groups, two house leaders who are tutors as well and another six teachers. In each of the tutor groups the design is that it is a vertical group, so you have about 18 to 20 students from years 10 to 12, and the tutor has time in their allotment to work with all of those students. The tutors know where they are at with their learning and support their emotional needs.

We have a chaplain on our staff, we have a student wellbeing coordinator on our staff and we have ready access to regional support, SSSOs and psychologists. We have good relationships with organisations like Child FIRST and CAMHS and places like that, because we have had significant issues with a small number of students who have the issues that you described.

We think we have got a good structure in place, and we are very aware of the stresses that are involved with high-performing kids — 99 per cent is not enough for some kids, and I think that is a dreadful shame. We have got to teach our kids to be comfy in their own skin, and when they get a different message from home I think that is a really big problem in schools with some of these kids.

There are some groups in the community that really do push. They see medicine as the target and falling anything short is not good enough. So the students wear this like a badge of shame if they do not quite achieve. We are forever working really strongly with our kids to encourage them to be proud of themselves and proud of

their performance and to build resilience, which is a significant thing for these kids, so that they can survive the dips that happen because you cannot maintain that level of performance all the time. Life is about being able to deal with that.

Ms MILLER — I think that is really commendable that you are managing the psychosocial kind of thing, particularly because they are still developing as adults as well.

Mr CORKILL — Yes.

Ms MILLER — The committee understands that the John Monash Science School has a partnership with Monash University. What benefits or opportunities does this relationship provide to the students and teachers at the school?

Mr CORKILL — What the partnership brings is the cutting edge of modern science into the classroom. Those subjects I described to you before are co-written by Monash academics and our staff. What they bring to the table is knowledge, research; this is where it is at. Bioinformatics — I could not have told you what it was two years ago. Now I know. I will give you an idea of the opportunities afforded to our students.

Monash has funding to work with the bacteria on the facial tumours of the Tasmanian devil, and our students in bioinformatics will map the genome of that bacteria. It will take about three years and six successive groups of kids. By 2014, if we have mapped the genome, we will be part of the academic research papers that hopefully could lead to some intervention which might save that species. That is what our bioinformatics kids do. That is what the university brings.

We have academics in physics, chemistry, biology, geoscience and mathematics working with the school. The university has provided them with time to work with our teachers. But since we have been established, we have had numbers of other faculties in the university that have given their own time and resources to work with us — like computer science, geography, pharmaceutical science and engineering. It just gets bigger and better, and we want to bring that into the classroom.

What we bring to academics is an idea of how to synthesise a body of knowledge into a learning sequence for kids. We teach them how to communicate science to a less mature audience. That is part of the problem with science these days; people think it is all white coats and goggles and too far out of reach. We teach them about assessment and how you know that the kids know. That is the great interface, apart from the fact that they are on several committees, they are on our school council, we are on the Monash security system, we use Monash sport for physical education. We feel genuinely part of the Monash community, and it is great privilege to be there.

The deputy vice-chancellor and the vice-chancellor are very smart people with big ideas about how to bring what is happening at John Monash to a much wider community; they are already thinking about that. We are part of their strategic planning now that they have convinced themselves this is going to work and it has a really bright future. We feel that we are in genuine partnership with the department of education and with Monash University to create something really special.

Mr ELASMAR — Many schools have told the committee that it can be difficult to recruit teachers with the appropriate qualifications and experience to teach highly able students. Has this been your experience, and are there specific characteristics that a teacher of gifted and high-ability students should have?

Mr CORKILL — Yes. We have been fortunate to attract quality fields in most positions we have advertised, and that is from all sectors, not just the government sector. We have a number of teachers who have come out of other sectors to come to us. I suppose if I was to encapsulate what I am looking for in staff, I always look for people who have strong knowledge of the discipline they are teaching and who are passionate about young people. The big thing for us is being open to new learning, because if you come to our school to work, you have to do things differently. If you do not do teams but do empires, you will not get a job at our school.

I have had teachers in interviews ask me: ‘Where is my office? Where is my budget? Where are all the things I need to teach physics?’. We then think that we will not see them, because they will hide in a corner, do their own thing and not worry about anything else. We find the team approach works best. We use data wisely on

knowing how kids are travelling, and teachers work in teams around that. I teach a year 11 maths class with the head of maths, and each lesson is planned. We need people who can do that sort of work.

Are the needs of this school different to my previous one when I went looking for staff? I suppose that extra dimension about being open to new learning is really important to us in particular, and that probably is a point of difference. One of the things I think the system worries about is losing its best teachers to us and them being locked away forever, and I have been conscious of that. We have managed to work with the department and the Australian Education Union, and we are now able to hire teachers in maths, science and technology on three-year, fixed-term tenure in a leadership capacity. We build capacity over three years and release them back to their schools, hopefully to lead change. The sorts of people who are attracted to that are these really energetic young teachers who want to have a go at something very different. I think this openness to new learning is starting to manifest itself in what they want to do. We have an emerging leaders program at the school. About 15 of our 35 staff come regularly to listen to leaders, not only in education but in business and industry, talk about their journeys. These people are hungry for this sort of knowledge.

Because we are getting better at using data, we need our people to know their students. They need to know that the student is highly talented and does not need to go through this part of the unit because you know they already know it. We are really big on, 'Don't give them more of the same to do, give them something different'. That is really important. A lot of the open-ended nature of the project work in the school allows students at all sorts of levels to get access and then fly at their level. That is also important. We need people who can manage to differentiate learning, I suppose, for kids, which is the real key. That is what we are looking for. If they do not know it already, that is fine, as long as they are prepared to come and work and learn. If I can convince myself that they are of that mindset, then they are fine.

Mr ELASMAR — Many submissions to the inquiry have suggested that in general Victorian teachers do not have sufficient knowledge and understanding to provide effective programs for gifted and talented students. What kinds of qualification or training do teachers at the John Monash Science School have, and what kind of qualification or training do you think teachers need to effectively cater for gifted and talented students?

Mr CORKILL — I do not think the teachers who come to us have formal training in gifted education. We have one or two who do, and I have one teacher starting next year who certainly does. If that became a precursor to working at John Monash, I think I would struggle to start the school, because there are not as many people around who are in that area. John Monash Science School is not set up for gifted and talented kids; it is set up for all kids who have a passion for science and some genuine capacity in it. Having said that, we certainly have our share of kids whom we would say are outstanding performers and, I suspect, in the realm that you are talking about.

I am not sure that I can help with anything over and above what teachers are coming to schools with in terms of, for example, a bachelor's degree in the discipline they are teaching plus a very solid teaching qualification, whether that be a dip. ed or in some cases a master of education. But, as I said, the qualities they need to have to work with us are openness to new learning and the ability to differentiate the curriculum to cope with all kids, including gifted and talented kids.

The CHAIR — Once they are there, what about professional development? You mentioned an emerging leaders program as one; are there other specific programs that you offer to help?

Mr CORKILL — Every Wednesday afternoon our year 10 and 11 students go into an enormous co-curriculum program of music, drama, dance, sport, languages and art. All sorts of things happen that are really good. We bring a different workforce into the school to manage it. Some of the kids go to Monash sport, some of them are in short courses like first aid. While that is on, our staff every Wednesday afternoon undergo 3 hours of professional learning as part of their week. We structure the program and we give teams time within that program to develop curriculum, to work with data, to identify how kids are learning and all that sort of thing. Over and above that we run significant professional learning on differentiation.

One of the groups I did not mention before in terms of working closely with the school is the faculty of education. They have assigned two people who do an enormous amount of work with our staff on how to use flexible learning spaces, what team teaching looks like, how effective learning is for kids, how you know they

are learning. Professional learning is huge for us. Beginning teachers and emerging leaders are two platforms outside that umbrella, but everything else happens within it, so I think our professional learning is strong.

We also avail ourselves of a lot of what is going on at the Bastow Institute. We have a number of staff undertaking leadership modules there that really help. We really want to build capacity in our own people by leveraging the skills of our own staff, because some of our more experienced teachers have 20 or 30 years of knowledge to share with younger people. That is all part of it.

Mr ELASMAR — How does the John Monash Science School use technology to enhance students' learning experiences?

Mr CORKILL — Every student at the school has a device, a tablet, and all our staff have that. Our whole curriculum is on Google apps, the same as in Monash. We use technology to house curriculum. It is quite a paperless type of environment. There are textbooks in mathematics and English in year 10, but nowhere else, really. All these new subjects, this knowledge is new; you will not find it in books, so it is all online and linked to relevant websites and all that sort of thing.

The students use technology in a number of different ways. They use it to collaborate with each other, they use it to create content, they use it to collaborate with staff. Having an individual device means that they have access to the curriculum 24/7, at home and at school. Having said that, that has brought some issues that we need to be very mindful of, about the extra access that kids now have and how we monitor their use of social networking and things like that. But by and large, that has afforded us a huge boost in their access to knowledge and their capacity to build it themselves.

We have electronic whiteboards through the school, hand-held technology in maths — graphic calculators; data in loggers in science, many schools have them — and the use of technology is also a significant part of our professional learning programs. Teachers come to us from all across the spectrum. Some of the younger ones know all about how to use hand-held technology in classrooms, including iPods and phones and podcasting and vodcasting and all these things in the lexicon that did not exist a few years ago — and they are able to teach some of our more experienced staff how to use it. So it is sort of a learning community around technology. There are two things, I suppose: technology and the team teaching are less mature. They are sort of evolving, so I will be able to tell you a lot more about how all that works in two years time.

The CHAIR — Just very quickly on parental support, many of the submissions we have received talk about the lack of parental support and guidance for students. Do you provide any specific programs or support for parents?

Mr CORKILL — We have a strong PFA. They can bring in guest speakers for parents. We run a lot of information nights. We have lots and lots of meetings with parents whose students are demonstrating some of the behaviours you were talking about before, to get them on board. Some parents hide those things. We worked with one boy last year. Ten months into the school, dad came to tell us that he had been diagnosed with Asperger's syndrome, and that was a shame for the family, so he did not want us to know, and all this sort of stuff. So we work on a case-by-case basis.

Like I said before, the challenge of managing parental expectations is something that is an opportunity for us, that we really have to address and work more widely on, to encourage them to be prouder of their own kids and more realistic in their expectations around what they can achieve, because they are not all going to be doctors and they are not all going to get A-plus every time they sit through a test. I suppose the answer to your question is it is case by case; with some of the bigger issues, like use of ICT at home and all that, in forums, which has been okay.

The CHAIR — Peter, that concludes our questions. Is there anything that you would like to add that we have not already covered?

Mr CORKILL — You did ask me something before about achievement versus potential. Our datasets that we get back from the company do measure that. I cannot tell you how reliable that measure is, but we have brought a number of kids with very high potential into the school. To give you round figures, I can remember one boy, a potential 90 versus achievement 57, who got into the school and now is the best performing physics kid at John Monash, bar none. Those are the sorts of kids we love to encourage, kids that are cruising.

What I now know is that we have demonstrated that there is a place for specialist schools. I do not know how many of these can bob up here, there and everywhere, but I think if we get the capacity to work with partner schools to actually reach out to more of these scientifically gifted kids statewide, you might not need more, with the prevalence of technology and running immersion days for kids. They come to Melbourne for a week or something, and then they can stay at home, which is probably better, because a lot of these kids do not want to relocate — and it is better for their home town.

I think already we have made a bit of a mark, and I think the future is really bright for schools like ours. I think that is probably it.

The CHAIR — That is great. Thank you very much. It has certainly been very valuable, hearing your experiences and what you are doing there. Congratulations and keep up the good work.

Witness withdrew.