



Australian Government

Chief Scientist

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Dinner Address

Winning the game of Faculty

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I recently came across a board game called Power Grid.

It's like Monopoly for electricity: each player represents an energy company that bids for power plants, and then competes to supply the market.

You win if you connect the most cities.

Before you ask: yes, this board game was designed by Germans.

But it's also available in English, French, Polish, Italian, Spanish, Dutch, Chinese, Korean and Portuguese!

It's sold hundreds of thousands of copies!

Everyone loves playing energy policy!

And I thought: of course they do! What sector has more intense human drama than energy?

Which sector calls for such a rich combination of tactics and strategy?

Where could you possibly find so many wonderful, detailed, positively Germanic rules; and pages and pages of score-cards, with complicated and occasionally incompatible objectives?

And then I remembered! Forget energy: what we need is a board game about building and running a university.

We could call it "Bricks... Bricks and Mortar Board".

Or Dungeons and Dragons. No: already taken.

How about: "Game of Sandstones". Sorry!

"Faculty". Let's just call it "Faculty".

Here's how I imagine that *Faculty* would be played.

Every player is a Vice-Chancellor.

You start the game with an allocation of land and some funds that you can spend on various things: research facilities, big name scientists, campus amenities, you name it.

You win by driving your institution up the ranks for research excellence, student satisfaction, graduate outcomes, staff diversity, community engagement, environmental sustainability, industry partnerships,

workplace safety, fiscal responsibility... and every now and then, without warning, new rankings will be added to the list.

As a player, all you have to do is keep all of those goals in mind, all the time.

Every round, to make more money, you have to enrol more students. But don't forget: you have to make them happy *and* employable.

And you can't do that at the expense of your research facilities, because then your ranking would fall...

Which would cause your student numbers to slide...

Which would eat into your budget. And you'd be back at Square One: building up your reputation *all over again*.

Can you play by house rules? No. That's why we have a whole stack of *TEQSA* cards: to keep up the standards.

Is there a Get Out of Jail Free card? No, of course not: this is higher education! Nobody gets *anything* for free... sorry, I mean: nobody *ever* does anything illegal!

And no, there's no Free Parking, either!

But there would definitely be wildcards. Oh yes... there would definitely be wildcards. We'll call them *POLICY* cards.

Roll the dice. Land on a *POLICY* card square and turn the top card from the deck.

A train line is built to your campus: double your student intake.

Turn another: an election is called: spin the wheel of fate!

Turn another: "You have won second prize in a beauty contest"... sorry, wrong game... "You have received a rating of 5 in ERA": boost those rankings!

See, it would be fun!

But I hope it would also be educational – and a reminder that the success of our universities is not a matter of chance.

If it's a game, it's a game of strategy: one that the people in this room have played extraordinarily well.

There was a time when I thought that universities were racing towards extinction.

I gave a speech in 2008 about how the virtual world called 'Second Life' was turning learning inside out. Bricks and mortar campuses would close. Education would move online. One university to rule them all. The end of a thousand year dream run.

But we said something similar about board games. They're even older than universities: we've been playing them for more than five thousand years.

And what do you know? In 2018, it turns out that board games are booming – especially in Germany. And the people who are buying them are the kids who grew up surgically attached to their smartphones.

I promise, there are students right now, in colleges on your campuses, playing board games.

The same basic truth about human beings keeps universities and board games going strong.

We thrive on human connection. Playing a game online and playing across a table are not the same experience.

It's true, our universities are changing.

But that's because the people in this room are changing them: not reluctantly, but strategically; with a vision for making them better.

I don't see a sector being dragged backwards into the modern world.

I see a sector *inventing* the modern world, and re-inventing itself.

I've said it before, and I'll say it again here tonight: our universities are among the best-run innovation projects in the country.

That doesn't mean that every experiment we've tried has succeeded.

Even Grand Masters have to reconsider their tactics from time to time.

If there's one thing that I hear more often than anything else, it's this: bring back mathematics prerequisites for courses where a knowledge of

mathematics is required. I hear it from teachers, I hear it from parents, I hear it from employers and yes, I even hear it from your lecturers.

A close-run second would be: let's have a better conversation about the role of the ATAR.

We in this room know the ATAR is a tool.

Students treat the ATAR as the goal.

We see the ATAR as a means to select students.

Students see the ATAR as a reason to choose subjects that will boost their score, rather than the advanced and appropriate subjects that will underpin their future studies.

Ask any Year 10 student: how do you boost your ATAR? You drop down a level in maths.

So we end up with an absurd situation. Students pick easy maths because they want to get the ATAR for engineering. They get into engineering and they struggle because the maths isn't easy.

The burden should not have to fall on your lecturers to retrofit fundamental knowledge and skills through bridging courses that, in any event, are no substitute for years of learning at school.

The system endorses the ATAR for the same reason that the people who make board games put an age range on the box: so buyers can work out whether this game is right for them.

But the analogy is failing. So what should we do, as a sector, to help students see beyond the ATAR to the skills they need for the course? It is time to transform, not defend.

But enough about tactics. Let's think about the *Faculty* game. How could we change it, as a country, to make it easier for Australia to win?

Right. I've got ten recommendations. Turn over the egg-timer. Feel free to shout "bingo" if you agree.

One. Pre-reading. Everyone in Canberra and probably the country should read or watch Professor Margaret Gardner's National Press Club speech.

Two. Upgrade the pieces. I'm talking about a long-term strategic commitment to our national research facilities: the planning, the building, the maintenance and the graceful exit.

Three. Get a better score-card. In particular, do something about the way that the statistics on university collaboration with industry are reported.

I can't say this delicately: the global rankings today are flawed. The claim that we are the worst of the worst in the OECD is wrong.

Start with the 16,000 businesses that Margaret told us today have formal collaborations with Australian universities.

That number is 30 times higher than the collaborations we last reported to the OECD.

Assume that five years ago, when we made that report, we were half as good as we are now.

For one thing, we would have made truly astonishing progress!

But our reporting would still have been out by a factor of 15. It defies belief.

We haven't even accounted for businesses collaborating with the CSIRO. Or ANSTO. Or the medical research institutes.

What is going on?

It turns out that the collaboration rankings in the OECD are determined by business surveys: and we do ours differently than the Europeans.

Efforts are made to align the two. But because of methodological differences, we still come off very much the worse.

Should we collaborate more? Yes. 50% more sounds good. Well done to Universities Australia for upping the ante. But let's also get better at providing the score to the OECD.

Four. On the topic of score-cards: let's welcome the ARC impact and engagement metric. It was carefully designed following a proof of concept trial and pilot. Like it or not, society has a right to know the benefits it reaps from its investment.

Five. Community Chest. Let's support Innovation and Science Australia's call for a fund to assist university commercialisation activities.

Six. On that subject, let's also back Innovation and Science Australia's recommendation for a collaboration premium as part of the Research and Development Tax Incentive: an extra incentive for companies who do their R&D in partnership with you.

Margaret issued the clarion call to business today: and not just a call, but a business case, a phone book and a primer.

So no excuses: to all the business leaders out there, we know you've all got phones.

Seven. Long-term commitments from the banker.

Wouldn't it be nice if every time you passed Go, you could be confident that you would receive that \$200, so you could plan your next investments with a view to the short-term needs as well as the longer-term horizon...

You could bang that hotel down on Park Lane like you *meant it*.

I remember a conversation I had with a senior policy bureaucrat in France when I led an innovation delegation there last year.

We were talking about our experiences with long-term programs.

When I asked how long the funding for their Cluster Program would last, he literally did not understand my question.

It turns out that their funding is indefinite, with a strategic review every four or five years. I literally did not understand his answer.

Instead of funding their programs for four years and making a decision towards the end of the period to either renew or terminate, the funding continues forever – unless the decision is made to terminate following a strategic review.

Once I understood, I fainted with envy.

Eight. Threats. University leadership responds to threats like a vacuum cleaner to dust. Bring it on. Books, radio, television, video, the internet, search engines: they've all been hoovered into day to day operations. MOOCs? Deliver and incorporate. Micro credentials? Deliver and compete.

Nine. The relationship with the VET sector. I've had my eyes opened.

In recent months I've been talking to companies about their programs in schools. They all want to talk to me about VET.

They say it's critical. They mean critical in both senses: critical as in "vital", and "critical" as in "extremely unwell".

A cynic might say that VET's loss is university's gain. In a narrow sense it might be true: but as far as the nation is concerned, it's definitely not as it should be.

VET and universities have complementary strengths. So let's play to win, as Higher Education United.

Ten. Engage in a national discussion: an aspirational discussion. How about this: in the game of *Faculty*, if you pick the POLICY card that says "engage in a national discussion", and you follow the instructions, every player receives a five-million dollar endowment from a philanthropic foundation, with absolutely no strings attached.

With new rules like these, *Faculty* would be a game that we could play with confidence. Less trauma every time you unfold the top card from the POLICY deck. More confidence every time you turn the top card from the TEQSA deck.

Faculty might not be on the shelves in time for Christmas.

But I have every confidence you, the leaders in this room, will continue to play the real game with vision, with teamwork, and with strategy.

We play the game for good reason. The first and arguably greatest neuroscientist, Ramón y Cajal, said his father taught him that "ignorance was the greatest of all misfortunes, and teaching the most noble of all duties".

So here's to all the Grand Masters of Higher Education gathered in the Great Hall of Parliament House tonight.

And let's keep the real game going for another millennium.

THANK YOU