Big Data for Students & Curricula: Creating an Educational Research Registry*

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Okay to tweet - @tmpbrock, @MonashPharm
New course

**Vertical Integrated Masters (VIM) degree**

- **Year 1**: Full-time study
  - BPharm (Hons)
- **Year 2**: Undergrad
- **Year 3**: Postgrad
- **Year 4**: Paid internship (ITP) + Part-time study (IFP)
- **Year 5**: MPharm
### New focus - *skills, frameworks, & models*

<table>
<thead>
<tr>
<th>Problem solving</th>
<th>Teamwork</th>
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<tbody>
<tr>
<td><strong>Oral communication</strong></td>
<td><strong>Inquiry</strong></td>
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<td><strong>Written communication</strong></td>
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<td><strong>Empathy</strong></td>
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<td><strong>Reflective practice</strong></td>
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<td><strong>Integrity</strong></td>
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*Monash - 38*
New instructional model – *active learning*

**EXPLORE**
interactive lectures

**APPLY**
workshops

**DISCOVER**
preparatory work

**REFLECT**
coaching & personalised learning plans
New threads – integrated, intercultural, interprofessional
New technologies – practice & education

Robots Are Now Handling Pills. Will Pharmacists Be Liberated or Out of Work?

Six reasons AI technology will never take over from human teachers

MyDispense
Virtual Practice Environment for Teaching Safe Dispensing

LENS

Six reasons AI technology will never take over from human teachers

MyPharm Skills Coach
We need to understand what’s working (& not)

- Students
- Academics
- Preceptors

We should share with others what we find

- Student support
- Curricular innovation
- Scholarship

Quality improvement

Research
What we did…

- Identified project champions from academic & professional staff
- Reviewed data points typically collected in individual units/subjects
- Reviewed data points typically collected programmatically
- Created an engagement index (**quality improvement**)
- Projected the number of times consent would need to be requested (ie, student burden) to share findings outside Monash
- Developed a local research review committee
- Proposed the registry approach to university ethics committee (**research**)
- Piloted (2018)
All educational research projects ARE reviewed by our school’s educational research committee & our university’s ethics committee!
Educational Research Registry Opt-Out Notification

To make sure that our students are getting the support they need to be successful and that our course is of good quality, we keep a close watch on things like attendance, participation, engagement with our learning tools, performance, and marks. We collect this information in a special computer database and we review it regularly. This process is consistent with the Monash Student Privacy Collection Statement.

We would also like to use the information we routinely collect for this quality improvement to do educational research. This would mean we would share the results of our reviews with academics at other universities via presentations and publications. When we do this, the information we share would be grouped. We would not use your name or any other identifying information. We have linked an example below to show you how this looks.

If you do not want your information to be used for research, you can click on this link to let us know this. If you choose not to participate, this will not affect your marks or your ability to participate in the course. You can access this link at any time during your studies with us.

Example of an educational research article created from Monash pharmacy student data 628.2KB PDF document

Dialogue about link to their INQUIRY skill & their future P4 Inquiry Project
What we found...

Multiple step-wise regression analysis

<table>
<thead>
<tr>
<th>Independent</th>
<th>Dependent</th>
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<tr>
<td>• Diagnostic English Language Assessment</td>
<td>• P1 OSCE analytical</td>
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<tr>
<td>• Situational Judgment Scenarios</td>
<td>• P1 OSCE communications</td>
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<tr>
<td>• Oral &amp; written communication support sessions</td>
<td>• P1 Exam scores</td>
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<tr>
<td>• Discovery preparation: check-your-learning</td>
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<td>questions</td>
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<td>• Explore lectures: clickers/PollEv</td>
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<td>• Apply workshops: attendance</td>
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<td>• Reflect: reflection submissions</td>
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<td>• Assignment scores</td>
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- Communication support sessions were predictive of OSCE performance (communications)
- Workshops were predictive of OSCE performance (analytical & communications)
- Specific assignments were predictive of exam performance
What we have learned from the educational research registry so far:

- **student support** – early oral & written communication support can make a difference
- **curricular innovation** – workshops are worth the expense
- **scholarship** – registry approach is feasible and valuable
Big Data for Student Success Still Limited to Early Adopters

At the U. of Iowa, Sam Van Horne (seated) and his staff members run a big-data project that provides students and instructors in certain courses with continually updated dashboards of information, including a forecast of the student’s final grade.

By Lawrence Biemiller | APRIL 09, 2017  PREMIUM