Gate-keepingInto the KnowledgeSociety:

*Have We Got it Right?*

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Overview

• Study compares university entrance scores with subsequent grades in ten different disciplines.

• Cohort is approximately 7000 students admitted to a university in Queensland, Australia between 2003 to 2005.
Participant’s Interests

• Directly involved in admissions

• Academics
  – Which disciplines?

• Interested in non-traditional students

• Interest in Generic Skills?
Admissions

• The majority of students (two thirds) were non-school leavers – i.e. did not use the school leaving certificate as their entrance criteria.

• Admission is usually based on a single numerical rank, called a Tertiary Entrance Rank (TER)
SchoolLeavers

• School Leavers receive a single rank based score, called an Overall Position (OP), that is directly translatable to a TER.

• They also receive scores in up to five generic skills known as Field Positions.
University Grades

• University courses are classified into ten discipline areas depending on what is taught.

• Letter grades were converted into numerical values for the analysis.
<table>
<thead>
<tr>
<th>Description</th>
<th>OP</th>
<th>Extended Writing</th>
<th>Short Written Communication</th>
<th>Basic Numeracy</th>
<th>Complex Reasoning</th>
<th>Extended Performance</th>
<th>Non-OP TER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural and physical sciences</td>
<td>-0.47</td>
<td>-0.42</td>
<td>-0.45</td>
<td>-0.45</td>
<td>-0.44</td>
<td>-0.47</td>
<td>0.28</td>
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<tr>
<td>Information technology</td>
<td>-0.49</td>
<td>-0.47</td>
<td>-0.47</td>
<td>-0.48</td>
<td>-0.45</td>
<td>-0.46</td>
<td>0.33</td>
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<tr>
<td>Engineering and related technologies</td>
<td>-0.47</td>
<td>-0.47</td>
<td>-0.49</td>
<td>-0.43</td>
<td>-0.43</td>
<td>-0.50</td>
<td>0.28</td>
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<tr>
<td>Architecture and building</td>
<td>-0.56</td>
<td>-0.34</td>
<td>-0.52</td>
<td>-0.45</td>
<td>-0.72</td>
<td>-0.52</td>
<td>0.24</td>
</tr>
<tr>
<td>Agriculture, environmental and related studies</td>
<td>-0.32</td>
<td>-0.35</td>
<td>-0.34</td>
<td>-0.26</td>
<td>-0.20*</td>
<td>-0.24</td>
<td>0.24</td>
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<tr>
<td>Health</td>
<td>-0.33</td>
<td>-0.32</td>
<td>-0.31</td>
<td>-0.30</td>
<td>-0.26</td>
<td>-0.31</td>
<td>0.23</td>
</tr>
<tr>
<td>Education</td>
<td>-0.33</td>
<td>-0.32</td>
<td>-0.31</td>
<td>-0.29</td>
<td>-0.28</td>
<td>-0.30</td>
<td>0.18</td>
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<tr>
<td>Management and commerce</td>
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<td>-0.44</td>
<td>-0.44</td>
<td>-0.37</td>
<td>-0.41</td>
<td>0.27</td>
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<tr>
<td>Society and culture</td>
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<td>-0.39</td>
<td>-0.39</td>
<td>-0.36</td>
<td>-0.32</td>
<td>-0.36</td>
<td>0.27</td>
</tr>
<tr>
<td>Creative arts</td>
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<td>-0.33</td>
<td>-0.34</td>
<td>-0.29</td>
<td>-0.28</td>
<td>-0.37</td>
<td>0.25</td>
</tr>
</tbody>
</table>
Two distinct patterns

Figure 1: Plot of Engineering, the Diving Fish
Figure 2: Plot of Education, the RockingPyramid
Little difference in patterns between school leavers and others.
Study Limitations

• Only one university. We would characterise it as “not a prestige university”, and results may vary at other universities.

• Grouping into disciplines subject to some bias

• University grades were collected across multiple years, but more first year grades
Whom do we want to select to enter university?

1. Those who deserve the reward of university study, having worked the hardest to gain it;

2. Those who will succeed most at university;

3. Those who will gain most from a university education; and/or

4. Those whose education will deliver the most to society.
Conclusion

“We live in a knowledgesociety, where university degrees are the admission tickets that prescribe the type of seats one gets. Deciding who is granted admission to what programme needs to be done well, from both an ethical perspective and the perspective of public good.”
“Selecting university students purely on school-leaving academic qualifications is both economical and transparent. However, as this paper and others show, only at most 40% of a student’s university grades can be predicted by a school-level qualification, and even this only for some academic disciplines.”
“Our research suggests that different disciplines adopt different teaching strategies, and these may make traditional selection methods even less relevant.

Furthermore, the massification of higher education is opening up universities to non-traditional students. Our data suggest that the predictability of non-traditional students’ university grades may be lower but of a similar pattern.”
“The true success of our students is not in their university grades, but in the value they add to society 10 to 20 years after they leave our influence.

What matters most is what works best, for our society and for our students, those who are admitted to university as well as those who are refused.”
“The answers to how to get university selection right is complex and situated, and requires much further research and debate. 

The transformation of higher education for the knowledge society is likely to require the transformation of our selection processes, and we need to attend to this transformation with a balance of sound science and ethics.”
Discussion

Should we select students?

If so, how?