

**Critical Thinking Standards Rubric –
School of Veterinary & Biomedical Sciences, James Cook University**

Within the School of Veterinary & Biomedical Sciences at James Cook University there are three degree programs, Veterinary Sciences, Medical Laboratory Science, and Biomedical Sciences (BiomedSci); only the first two are accredited. The BiomedSci degree itself serves a number of very important functions:

- To train students in Biomedical Sciences in the North Queensland region
- To provide a suitable, relevant course for students from which they can apply for entry to the professional degree programs at the end of first, second or third year
- To provide a training ground for students wanting a career in research

The development of the rubric was very timely with respect to curriculum development within the School. The group involved in the development consisted of a mix of academics and professionals, and covered a variety of disciplines, teaching and research experience, and personalities. The disciplines covered included: Animal Physiology; Medical Laboratory Science; Microbiology; Biochemistry; and Veterinary and Animal Reproduction. The composition of the group was critical to achieving the final rubric in the limited time available. There was a fairly unique mix of people where individuals were not afraid to state their viewpoints, challenge those of others, and be challenged themselves, without getting stuck there. As a result, the group worked well together. The free expression and appreciation of ideas by individual members, and consideration of all suggestions by all group members, emerged as strengths of the group. At the end of each meeting, which generally lasted about 2 hours, the updated rubric was circulated to the group members; at the next meeting it was modified according to comments raised prior to or during the meeting.

It was found it was easy to use Teaching and Learning jargon but, once challenged, it was realised that the meaning was not clear e.g. “frameworks”. Therefore, the group spent considerable time in the early stages going through “the muck of the semantics” (as one group member described it) before being able to get through to something meaningful for the students (and staff themselves).

Progress also was slow until the definitions of, and requirements for, the different levels were identified; identifying “Competent” first was a very useful exercise as it provided a basis for the group to work backwards and forwards. Categories listed down the table were associated with the development of scientific method. Individual disciplinary requirements were able to be incorporated into the exemplars. To help provide a focus for what was required at each level, the group was constantly focussing on examples, such as, literature reviews. Sometimes this worked and sometimes it didn't.

What was learned from this exercise:

1. It was extremely useful for staff in identifying what they are trying to do to educate the students. It helped identify specific requirements that need to be raised with students at specific stages in their education. Staff comments included:

- “I have learned a lot from it. [This sort of thing] usually leaves me cold but this time I got something from it. I feel we can actually use it”;
- “Having to go through the rigor of having to define [“not-good”] and “good” was beneficial”;
- “Coming up with something meaningful for students was a challenge and that had to be kept in focus so students can understand what is required of them during their progression”.
- “[It helps students to] see that learning and development of skills hasn't finished when they graduate; instead they have a ‘key’ and that key opens the door to new opportunities”.

2. A major challenge which slowed progress at times was to provide a rubric which was useful for both professional and non-professional degrees as the goals of, and requirements for, each are different. One size does not “fit all”. It was found that each discipline has its own worldview and considered the concept of “Critical Thinking” from this viewpoint. However, it was found that broad principles are generally applicable and the group had to reach that perspective and not use individual perspectives as the basis of the rubric.

4. The rubric was recognised to be a suitable tool to provide feedback to students, in association with grading of assignments. It provides a “framework” (some group members hated that word) which can be given to students at the beginning of their degree so they can identify levels of achievement expected during their degree and enable them to measure their actual achievement against this.

5. It is felt to be a useful tool for to help clarify for students and staff where they can go with their degree once they have graduated, be it professional or non-professional i.e. what is involved in getting to the next level and where the career opportunities ultimately lead if they continue along a particular path. This helped to clarify and reinforce the importance of different aspects of Critical Thinking, and how and when they should be built upon during the undergraduate years.