

An Initial Study of the Usefulness of an Aptitude Test for Programming Courses

Margot Phillipps, Phil Robbins
Unitec
Auckland, New Zealand

Background

At AIT (as it was), students were generally not accepted on to the NDBC (and its fore-runners) without a score of 7 or more out of 11 on an aptitude test which was used for about 20 years to screen applicants.

Both authors now teach programming papers on courses where there is no longer a compulsory aptitude test and they observe that students admitted to tertiary programs are nowadays less able programmers than those who passed the aptitude test. The authors objective is to examine the significance of the compulsory aptitude test in admitting students with the ability to face the challenge of a second level programming course.

Proposal

To test whether the original aptitude test is in fact a discriminator for programming ability, volunteers of second semester programming students at both institutes will be tested and their course results compared with their aptitude test results. These students have displayed some level of conscientiousness, and/or ability in programming as they have passed the semester one course.

(Note: almost all fulltime students at Unitec will do Programming 1 (a compulsory course), in their first semester. However Programming 2 is an optional course and is taken by a reasonable number of students in their 3rd or 4th semester of study rather than their 2nd semester. For part time students they may not do Programming 1 for a number of semesters after beginning study and Programming 2 much later again.)

Conducting the Aptitude Test

As students will “disappear” at the end of the course, aptitude tests have been scheduled within the semester. They take approximately 2 hours (half hour explanation and 2 worked examples and one and a half hours for the test.) However they will not be marked until after all final exam marking is complete so that the lecturers are not prejudiced in assignment and exam marking.

Sample Size

As the test is voluntary, numbers as a proportion of the course will not be great (19 from a possible population of 87 at Unitec and 10 from 35 at AUT)

Results

After final exams are marked the final grade for the students will be matched with the aptitude test score