

Attributes of the university graduate: How important are they?

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Abstract

Along with subject-specific knowledge it is becoming accepted that tertiary students be equipped with a generic skill base. Such discipline-independent qualifications may be divided into competencies and attitudes which, taken together, constitute the attributes of a university graduate. This particular study deals with the University of Wollongong and so attributes of a Wollongong graduate (AWG). Data already exists for the importance placed on various AWG by employers. Here new data is presented regarding the view incoming students hold of the AWG. Both students and employers rank life-long learning and problem solving highly. Neither group ranks statistical, computer or cultural literacy highly.

Introduction

Historically, university students have been expected to be equipped with subject-specific knowledge: a student “reads” a particular subject. More recently, there has been an emphasis on equipping students in every discipline area with a broader, generic skill base. In differentiating themselves in the market, various tertiary institutions have attempted to delineate what general characteristics differentiate their graduates from others'. These characteristics may be called the “attributes of a university graduate”.

At the University of Wollongong, such discipline-independent qualifications are divided into “competencies” and “attitudes”. Taken together, these constitute the attributes of a Wollongong graduate (AWG).

How important are the AWGs? The short answer to this question is, “It depends whom one asks”. Data is already available concerning the importance placed on various AWGs by employers. In this paper, new data is presented regarding the view incoming students hold of the AWG. The results of student surveys are presented and compared with the ranking given by employers.

Method

The fourteen AWG that are the subject of this article are those that were extant c. 1993-1997. These are listed, for example, in the “Learning And Teaching Strategic Plan” (January 1997 revision). These attributes may be distinguished from the original ten attributes (c. 1992) proposed in the 1992-2000 Corporate Plan (for a list of which, see <http://www.uow.edu.au/admin/about/towards2000/gonggrad.html>), nor with the set of nine attributes current at the time of preparation of this paper (1997-2005 Corporate Plan; for a list of which, see <http://www.uow.edu.au/general/stratpln/guiding.html>).

Over four consecutive years incoming students taking an introductory physics class were asked to rank the fourteen AWG in order of importance. The survey was distributed to the class taking PHYS141, “Fundamentals of Physics A”. This subject is undertaken by physics majors, by other science majors and engineering majors, among others. Further details concerning the general composition and opinions of this group are given in earlier studies of teaching innovations (Lewis *et al*, 1991; Lewis 1995).

The survey was distributed at the very beginning of the first class in week 1. The survey is voluntary and anonymous. (Among other purposes it serves to confirm the “real” enrolment in the subject, that is, how

many students attend and participate in the class, as opposed to the “virtual” enrolment given by the computer.)

A variety of questions are asked in the survey. The question regarding the AWG reads: “Here are the ‘Attributes of a Wollongong Graduate’. Please put 1 beside the attribute you think most important, 2 beside the attribute you think next most important, and so on...”

Results

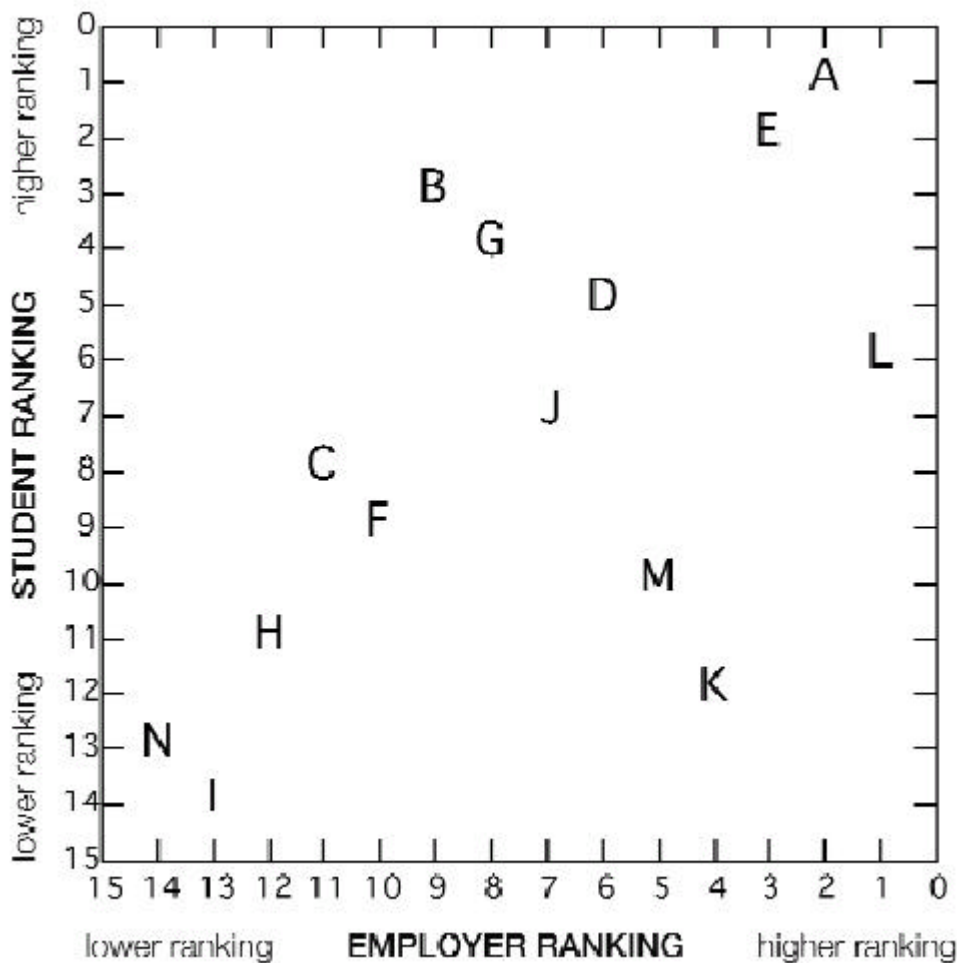
The fourteen blanks to be filled in for AWG question make the answering challenging for some. One might say this is a ballot in which quite a number of “informal” votes are cast. For example, some students, to indicate all the AWG are important, number each space “1”. Others indicate the first three or so preferences, then run out of steam. Others miscount, duplicating numbers, or missing numbers. All such invalid returns are discarded in the analysis that follows. The results, in terms of mean ranking, are shown in Table 1.

Table 1. Ranking of importance of AWG by incoming PHYS141 students.
Mean rankings are given on scale from 1 (most important) to 14 (least important).

Attributes of the Wollongong Graduate	Rank
<i>Competencies</i>	
A. Is equipped for continued learning, intellectual development, critical analysis and creativity	1
B. Has coherent and extensive knowledge in a discipline	3
C. Communicates clearly and fluently in writing	9
D. Has capacity for teamwork	5
E. Has ability to solve problems and make decisions	2
F. Is self confident and orally articulate	8
G. Reasons logically and distinguishes fact from opinion	4
H. Is computer literate	11
I. Is statistically literate	14
<i>Attitudes</i>	
J. Has the desire for continuing intellectual development and creativity	7
K. Is willing to initiate and participate in change	12
L. Values truth, accuracy, honesty, and ethical standards in personal and professional life	6
M. Accepts responsibilities and obligations and asserts rights	9
N. Appreciates his or her own and other cultures and customs	13

The results of a survey of employers are considered for comparison. These have been obtained from a number of internal sources. “External Assessment Outcomes” (Management Information and Planning) gives the response of 425 small to medium employers (20-120 employees). Similar data also appears in the “1994 Survey of Medium Size Employers”, which gives the response of 435 medium to large firms (121-5000 employees). An earlier report of 120 employers (mainly in the mining, manufacturing and service sectors), “Employer perceptions on the University of Wollongong graduate”, covers only 13 of the AWG. In each study, the employers were asked to rank the AWG according to “relevance to the organisation”. The mean ranking given by the students cohorts, now expressed using whole numbers, is shown plotted against the employer ranking in Figure 1.

Figure 1. Ranking of AWG by employers (horizontal axis) and students (vertical axis). The attributes are labelled A, B, C... as defined in Table 1.



Discussion

The data collected from students over four years is remarkably consistent over time. The ranking of the AWG seldom changes by more than one place from year to year. For this reason the data for the four years is combined in Table 1.

The top-ranked AWG are always the same three: “Is equipped for continued learning..” (AWG:A, ranked 1, 1, 1, 2), “Has ability to solve problems...” (AWG:E, ranked 2, 3, 2, 1) and “Has coherent and extensive knowledge...” (AWG:B, ranked 3, 2, 3, 3).

The bottom-ranked AWG are always the same four: “Is statistically literate” (AWG:I, ranked 14, 14, 14, 13), “Is culturally literate” (AWG:N, ranked 13,13,12,14), “Is computer literate” (AWG:H, ranked 12, 11, 11, 11), and “Is willing to initiate/participate in change” (AWG:K, ranked 11, 12, 13, 12).

Student and employer rankings may be compared in Figure 1. Attributes which fall on (or close to) the diagonal running from the bottom left to the top right of this figure are those which are ranked the same (or almost the same) by students and employers. These include attributes N, I, H, F, J, D, E, and A. Specifically, both groups rank highly “Is equipped for continued learning...” (AWG:A, ranked 2 by employers) and “Has ability to solve problems...” (AWG:E, ranked 3 by employers). Both groups give low rankings to computer literacy (AWG:H, ranked 12 by employers), statistical literacy (AWG:I, ranked 13 by employers), and cultural literacy (AWG:N, ranked 14 by employers).

The main differences between student and employer rankings are for those AWG that appear in Figure 1 as being far from the above diagonal. Students rank content as rather important (AWG:B, ranking 3) whereas employers put this in the middle of the field (ranking 9). On the other hand, employers rank highly the “agent of change” attribute (AWG:K, ranked 4), whereas the students always place this low on their list (rank 12). Perhaps most surprising is the disparity concerning ethical literacy: “Values truth, accuracy, honesty and ethical standards” (AWG:L). It is no less surprising that students rank this so low (rank 6) than that employers give it the number 1 ranking.

As far as implementing the AWG, whether the student or the end-user be regarded as the “client”, it is clear that the customers prize lifelong learning (AWG:A) and problem solving (AWG:E) and do not value computer (AWG:H), statistical (AWG:I) or cultural literacy (AWG:N). The emphasis to be placed on such AWG as knowledge (AWG:B), ethical literacy (AWG:L) and change-readiness (AWG:K) is problematical as there is a wide discrepancy in the student and employer rankings. A third stakeholder in the educational endeavour is the teaching staff; to the author’s knowledge, no quantitative data concerning the ranking of the AWG is available for this group.

Conclusion

The students surveyed here and the employers surveyed earlier both rank life-long learning and problem solving highly. Statistical, computer and cultural literacy receive low rankings.

References

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