

Graduate attributes – Do students really develop these at university?

Keywords: graduate attributes, higher education, university students, employability, education quality

Abstract

Students are expected to have developed a core group of generic graduate attributes (GAs) as part of their learning while at university. These attributes, such as communication skills and interpersonal skills, are associated with successful performance. Hence, while they are highly valued in the workplace, it appears many graduates are not developing GAs. It may be that increasing students' own awareness of GAs may help with their development. Our research sought to understand student perceptions of their own GAs and GA development at university. We used an online questionnaire to explore how students ($n = 594$) at different stages of their studies reported developing nine core GAs. A one-way MANOVA showed first year students reported acquiring significantly fewer attributes than more experienced counterparts for information skills, enterprising skills, analytical thinking, interactive skills, and problem-solving skills. This suggests that academic experience may be an important contributor to the development of GAs.

Introduction/theoretical framework

A student's experience at university is not just about learning knowledge and theory about their chosen subject; it is a time when they are developing in many different ways. For example, universities claim that they produce talented graduates who are also productive citizens (Bowden, Hart, King, Trigwell, & Watts, 2000). More than two decades of research has shown that generic GAs, that is the 'soft' skills that students are expected to develop as part of a university education are linked with positive outcomes for individuals and society (Barrie, 2006; Young & Chapman, 2010). These generic skills or competences are as

important to employability and successful performance as a graduate's discipline-specific knowledge (Young & Chapman, 2010). For example, GAs are important because they can be used (a) across and within different roles (Hager & Holland, 2006), particularly in flatter organisations, (b) where new employees are expected to contribute immediately (Yorke & Harvey, 2005), (c) when managing people and in more complex roles (Azim et al., 2010), and (d) in environments where technology is driving role change (Frey & Osborne, 2013). However, integrating GAs into university curricula continues to be problematic and many graduates enter work without having developed the skills that employers value (Jackson & Chapman, 2012).

While the development of GAs is seen as important, the nature of these skills – for example self-regulation and integrity – means that they are not easily combined with traditional academic teaching methods (Voogt & Roblin, 2012). Furthermore, many GAs typically develop over time rather than in a single lesson (Hager, 2006). According to Turner (2014), to improve and develop their abilities students must understand their current ability, possess the self-efficacy needed to develop their skills, and have faith that their environment will aid their learning. This view is supported by Gedye, Fender, and Chalkley (2004) who note that when it comes to learning GAs, students may be hindered because they are not always aware which skills are being taught. This research aims to examine the extent to which students at different stages in their university studies in three-four year degree programs (first year, middle year(s), and final year) report developing GAs while at university.

Method

Participants ($n = 594$) were recruited from an email invitation sent via the various faculty networks in a single university, and include undergraduate and postgraduate students.

The questionnaire asked participants to rate the extent to which GAs were acquired while at university. A positively packed 6-point rating scale with two negative and four positive anchors (strongly disagree, mostly disagree, slightly agree, moderately agree, mostly agree and strongly agree) was used to reduce the effect of positive responding (Brown, 2004). Student perceptions of the GAs (e.g., analytical thinking skills, problem solving, and continuous learning) were measured with a 9 item scale ($\alpha = .88$) developed from Coetzee's (2014) factors, (see table 1), within a 71 item online survey. The questionnaire also included demographic questions about the participants and their work/university experience.

Findings and conclusion

A one-way MANOVA was used to explore how students at different year levels of undergraduate study reported acquiring GAs. Initial results revealed a significant multivariate main effect for study year, $F(18, 1166) = 2.35, p = .001$; Wilk's $\Lambda = .931$, partial $\eta^2 = .035$; power $(1-\beta) = .994$. Significant main effects were found for interactive skills, $F(2) = 3.57, p = .029$; problem-solving and decision-making skills (problem-solving), $F(2) = 3.55, p = .029$; enterprising skills, $F(2) = 6.33, p = .002$; presenting and applying information skills (information skills), $F(2) = 10.99, p < .001$; and analytical thinking skills, $F(2) = 6.01, p = .003$ (see Table 1 for descriptive statistics by year group). Simple effects tests using the LSD adjustment showed first year students reported acquiring significantly fewer attributes than their final year counterparts for interactive skills ($p = .010$), problem-solving ($p = .008$), enterprising skills, information skills, and analytical thinking skills ($p = .001$). Additionally significant differences were found between first and middle year(s) students, with first years again reporting lower levels of enterprising skills ($p = .004$), information skills ($p < .001$); and analytical thinking skills ($p < .007$). There were no significant differences between any other groups ($p > .05$).

Students who were further along in their studies reported acquiring more GAs than newer students, which suggests that university experience could be a key factor in developing attributes. This difference in experience may occur because of greater awareness of GAs, increased practise, or more time spent in smaller classes. It is possible that experienced students have a greater awareness of GAs and how to develop them. Experienced students have had more opportunities to practise GAs, thereby aiding their development. Finally, as students' progress through a degree, they tend to study more specialised subjects in smaller classes which may allow for greater GA development.

Generalisability of current results is restricted by being drawn from self-reported, cross-sectional data. More research is needed to explore the role of experience at university upon the acquisition of GAs. A planned longitudinal study could measure the effect of time spent at university, to see how university experience is associated with increased acquisition of GAs and what other indicators may be contributing or detracting from learning these skills.

Table 1.

Table showing means, standard deviations and sample size for each of the study items and year groups.

Items (including definitions)	Study stage	<i>M</i>	<i>SD</i>	<i>N</i>
Interactive skills (Use of English language and technology in communicating and interacting with people from diverse cultures, backgrounds and authority)	first year*	3.61	1.39	182
	middle-year(s)	3.87	1.34	239
	final year*	3.98	1.35	173
Problem-solving and decision-making skills (Creativity and proactivity in the process of producing a solution)	first year*	3.93	1.30	182
	Middle year(s) *	4.10	1.26	239
	final year*	4.28	1.19	173
Continuous learning orientation (Acquiring new knowledge, skills and abilities, in reaction to, and in anticipation of, changing technology and performance criteria)	first year	4.37	1.16	182
	Middle year(s)	4.55	1.25	239
	final year	4.58	1.23	173
Enterprising skills (Application of critical reasoning, initiative and proactivity regarding economic activities or undertakings)	first year*	3.48	1.35	182
	middle-year(s)-year*	3.92	1.43	239
	final year*	3.91	1.27	173
Presenting and applying information skills (Communicating knowledge, facts, ideas and opinions clearly and convincingly)	first year*	3.85	1.35	182
	middle-year(s)-year*	4.26	1.17	239
	final year*	4.45	1.23	173
Goal-directed behaviour (Taking initiative in achieving one's goals, accomplishing tasks or meeting deadlines)	first year	4.00	1.39	182
	middle-year(s)-year	4.19	1.25	239
	final year	4.09	1.22	173
Ethical and responsible behaviour (Upholding the code of moral beliefs and values of one's profession, community and/or workplace)	first year	3.80	1.46	182
	middle-year(s)-year	3.82	1.42	239
	final year	3.93	1.48	173
Analytical thinking skills (Skilful, logical and critical reasoning and analysis, and drawing insightful conclusions from data)	first year*	4.26	1.38	182
	middle-year(s)-year	4.59	1.16	239
	final year*	4.68	1.12	173
Social enterprise (Use of skills in the community to contribute to neighbourhood or group benefit, such as volunteer work, leadership, or problem solving for others)	first year	3.51	1.40	182
	middle-year(s)-year	3.69	1.36	239
	final year	3.51	1.42	173

Note: *differences significant at $p < .05$

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