

2018-11-01

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Recommended Citation

Dunne, R., Fitzgerald, J., Manning, J., O'Reilly, S. (2018) *Achieving Graduate Attributes through Authentic Learning: The Case of Student Managed Funds*. PG Diploma in Practitioner Research Projects, DIT, 2018.

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Achieving Graduate Attributes through Authentic Learning: The Case of Student Managed Funds

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Introduction

According to the Department of Education and Skills (2011), as cited by Murphy and Whelan (2016), there has been a growing emphasis on the importance of graduate attributes in higher education in Ireland. This not only places emphasis on the application of disciplinary specific knowledge, but also on the 'soft skills' highly sought by employers. By providing an authentic learning environment, higher education institutes can facilitate the development of graduate attributes while also ensuring graduates are gaining disciplinary specific knowledge. This project explores how Student Managed Funds (SMFs) represent an authentic learning experience through which students achieve a range of graduate attributes.

In addition to the literature review that follows, we also provide details of the recently established Dublin Institute of Technology (DIT) SMF (Appendix A) and a step-by-by guide to the establishment of an SMF (Appendix B), whilst also showing how the DIT SMF learning experience maps to the DIT graduate attributes (Appendix C). Finally, as the artefact for the project (Appendix D), we have developed an infographic that summarises how SMFs are authentic learning experiences that achieve graduate attributes and provide tips for practitioners wishing to set-up an SMF.

Rationale for the project

As lecturers in DIT, we are continuously striving to adopt teaching and learning approaches that imbed the development of the DIT graduate attributes in our modules' curricula. Furthermore, as students of the Postgraduate Diploma in Third Level Learning and Teaching, we have become increasingly aware of how authentic learning experiences can support students in developing a range of non-disciplinary specific skills and knowledge. As such, with the recent development of the DIT SMF, we saw an opportunity to delve into the literature of the development of graduate attributes via an innovative authentic learning experience.

Achieving Graduate Attributes through Authentic Learning

Rowe (2016), Barrie (2007) and Green, Hammer and Star (2009) note that higher education institutions from around the world are emphasising that their graduates must do more than simply reproduce the discipline-specific knowledge and skills that form the core of most higher education courses. In an increasingly complex and globalised world, students need opportunities to develop ways of thinking that allow them to engage with dynamic and complex situations. The development of graduate attributes within higher education institutes has been suggested as one way in which students can develop the skills, knowledge and mindsets that are necessary for them to participate in complex, real-life situations (Barrie, 2007; Cormier & Siemens, 2010).

Bowden, Hart, King, Trigwell and Watts (2000, p.325) define graduate attributes as the “qualities, capabilities and understandings of a graduate, which a university community agrees students should develop during their time at the institution, both for their future professions and to make a contribution as ordinary citizens.” This includes qualities and capabilities, graduates contribution to society, as well as the more technical specific elements of higher education. Graduate attributes are much more than the particular course material, but soft skills necessary for students to make informed decisions and become work-ready graduates.

There has been considerable work in the area of graduate attributes, however, there is still uncertainty, particularly in the integration of graduate attributes into the curriculum and the ways in which graduate attributes can be achieved (e.g. Barrie, 2006; 2007; Clanchy & Ballard, 1995; Gibbs, 1994; Jones, 2013; 2009a; 2009b; Sumsion & Goodfellow, 2013). The implementation of graduate attributes is at the nexus of a complex range of factors which are shaped by the national social and cultural context of the higher education institute, the epistemological and ontological factors that shape the institute and colleges/departments, as well as the social and personal beliefs of the academic staff engaging with the students and their understanding of the graduate attributes (Jones, 2013). Thus, there are often multiple and conflicting influences and a range of perspectives and interpretations of graduate attributes and how they should be implemented across a higher education institute. As noted by Barrie (2006), the extent to which higher education institutes can develop the desired attributes in graduates is contestable. Additionally, as argued by Jones (2013), graduate attributes are understood as a collective as well as an individual phenomenon, as there are numerous communities across the higher education institute involved in ensuring the graduate attributes are implemented and achieved. Thus, variations in conceptual understanding and a lack of clear institutional method of integrating graduate attributes into a curriculum can lead to confusion regarding the role of graduate attributes in the higher education experience and how they can be achieved.

Barrie (2007) notes that graduate attributes could be understood as a process of engagement by students within the activities of a wider curriculum. Graduate attributes should not be supplemental to more important disciplinary content, but rather integrated into higher level learning outcomes that are transformative in nature. Thus, graduate attributes should be integrated into student learning activities across the curriculum that encourage students to think and behave according to the attributes that the higher education institute wants to their students to develop (Rowe, 2016). Jones (2013) explains that it is not the course content or even the graduate attributes themselves that are the focus, but rather the ways that students engage in learning.

DIT has developed its own toolkit outlining a range of desirable graduate attributes (2015) which include producing graduates who are innovators, active team players, excellent communicators, work-related learners, critical thinkers, reflective practitioners, among others. By providing an authentic learning environment students can develop these skills in addition to increasing their disciplinary specific knowledge (Murphy & Whelan, 2016). Stein, Isaacs and Andrews (2004) describe authentic learning experiences as collaborative experiential learning that is relevant from the students’ perspective (developing discipline specific knowledge), a reflection of the wider curriculum, and located in complex real world

problems. Herrington and Herrington (2006) argue that authentic learning experiences reflect the tasks and experiences seen in real professions and workplaces, and the problems students solve are complex and require intensive effort. Thus, authentic learning experiences are an approach to student-centred learning, whereby graduate attributes are learnt through the ways students engage with their wider curriculum (Barrie, 2007). As noted by O'Neill (2015), a student-centred approach to learning is achieved through the implementation of (social) constructivism (O'Neill, 2015). Put quite simply by Biggs (1999) and Shuell (1986), the focus is on what the student does in determining what is learned. Thus, authentic learning centres on the student and their learning, and the role of the teacher shifts towards mentoring and guiding (Stein et al., 2004). In this way, students become empowered in the authentic learning experience as they are given space to make sense of the situation and are in control of their own learning. Thus, the development of graduate attributes relates to the way students interact and engage with the learning experiences in their wider curriculum (e.g. Barrie, 2007; Prosser & Trigwell, 1999).

There is a constant challenge in higher education to bridge the gap between the students learning experience and the experiences of the real world beyond higher education. As noted by Lombardi (2007) and Stein et al. (2004), in the authentic learning experience students develop expertise in their discipline whereby they become reflective practitioners that begin to grasp the subtle, interpersonal knowledge of their professional community, and become motivated, engaged learners able to deal with ambiguity and communicate effectively. In so doing, students work collaboratively to become creative and critical thinkers, comfortable making decisions based on complex real-world problems. Thus, authentic learning facilitates the development of graduate attributes so students can contribute meaningfully to their professional community.

In summary, the development of graduate attributes is achieved in an integrative way, built into the wider curriculum where students learn both inside and outside the classroom. That is, graduate attributes are achieved by students' engagement in their learning experiences within their curriculum where they interact, debate and negotiate with their disciplinary specific knowledge and the attributes the higher education institute deems appropriate for their graduates (e.g. Barrie, 2007; Jones 2013; Rowe, 2016). In what follows, we discuss how SMFs represent authentic learning experiences that help develop graduate attributes.

The Case of Student Managed Funds

As noted above, in response to the growing consensus that higher education institutes have a responsibility to ensure graduates acquire a broader range of skills and knowledge, many higher education practitioners have developed authentic learning experiences that provide students with a more holistic third level education. Within the discipline of Finance, one such authentic learning experience that is increasingly being employed to develop students' non-disciplinary specific skills and knowledge is a Student Managed Fund (SMF) (Cooley & Hubbard, 2012). SMFs are investment funds that are student-led and managed, where a group of students are given a sum of money to invest in financial assets. In order to determine how the funds available should be invested, students are required to analyse financial and economic data, value financial assets using a range of valuation methods, and prepare and deliver investment pitches. Once the investment decisions have been made, students are then required to monitor and manage the progress of their investment portfolio. Much of this

work occurs in a group setting, and thus participation in an SMF is largely a collaborative learning experience.

SMFs originated in the US as far back as the 1950s, but it wasn't until the 1990s that they began to become a regular feature in the finance departments of many business schools (Lawrence, 2008). They were initially developed as a means to provide students with greater practical finance experience (Lawrence, 2008), but have become increasingly popular within business schools due to the following benefits they provide:

- Job-ready graduates: Participation in an SMF enables students to gain practical experience normally only available to individuals working within the finance industry (Lawrence, 2008), and their increased employability also acts as a marketing tool for the associated academic programmes (Cooley & Hubbard, 2012).
- Holistic learning experience: Participation in an SMF requires students to undertake a number of tasks including financial data analysis, asset valuation, economic and company research, stock pitches and investment decisions. As such, students develop a wide range of skills including research methods, written and oral communication, analysis and synthesis, and team-working (Neeley & Cooley, 2004).
- Realistic learning experience: SMFs enable students to invest real money and participate in the actual process of trading financial assets. This gives students a greater appreciation of the uncertainty involved in investing theirs or other people's money (Cooley & Hubbard, 2012).
- Cross-disciplinary knowledge: SMFs provide students with the opportunity to expand their cross-disciplinary knowledge (Kahl, 1997). For example, managing the fund requires an understanding of the legal and tax implications of trading financial assets, whilst investment pitches are more likely to succeed when students apply marketing techniques.

It is clear from its real-world, student-led and collaborative learning nature that an SMF represents an authentic learning experience that offers students the opportunity to develop a range of non-disciplinary specific graduate attributes. However, before considering the implementation of an SMF there are a number of challenges of which both faculty and students should be made aware. First, in order for an SMF to take off and subsequently survive, it is vital that a dedicated faculty member oversees the initial setup of the fund as well as its continuous management. This is a time intensive role and needs to be recognised as part of the faculty member's allocated timetable (Mallet, Belcher, & Boyd, 2010). Failure to do so may ultimately lead to insufficient oversight of the fund and it eventually ceasing. Second, although it is recommended that SMFs be integrated into the delivery and assessment of one or more modules (Neeley & Cooley, 2004), doing so can put significant strain on students relative to their other modules. For example, Kahl (1997) notes that student workload increases due to the regular meetings required in an SMF, and the responsibility associated with investing actual money can prove stressful for many students. Finally, the nature of an SMF means that the group of students participating in it changes from one year to the next, and thus the quality of the investment decisions may vary as the group changes. If a particular group of students perform poorly relative to prior years, future additional funding may be difficult to attract (Lawrence, 2008).

DIT SMF and Future Implementation

The DIT SMF was established in January 2018 and is part of Goodbody Stockbrokers' SMF. Founded and managed by students, a student executive committee oversees the day-to-day investment and operational activities of the fund, with any financial gains made from the fund being directly donated to a charity of the students' choice. Although the fund has yet to be incorporated into a specific module, plans are in place to incorporate the fund into a new 'Investment and Portfolio Management' module for BSc. Economics & Finance and BSc. Accounting and Finance students, commencing September 2018. Students undertaking this module will be required to participate in the fund, and the 40% continuous assessment (CA) for this module will be based directly on students' participation in the fund. This will take the form of a group project where students are required to value one or more companies using a range of valuation techniques (20% CA), a group presentation where students pitch their investment ideas to the fund's executive committee (10% CA), and an individual reflective journal where students reflect on their participation with the fund (10% CA). The DIT SMF can be viewed as part of the wider curriculum for students in the College of Business whereby they actively engage in their learning activities through the various roles and responsibilities of this student-led initiative.

Conclusion

The recent drive in the Irish higher education sector, and in DIT in particular, to develop teaching and learning methods that produce graduates with a range of non-disciplinary skills and knowledge has resulted in practitioners incorporating innovative authentic learning experiences into module and programme curricula. SMFs stand out as an exemplar of an authentic learning experience as they situate knowledge within relevant contexts to enhance learning, thereby providing students with the capacity to transfer knowledge learnt in the classroom into real world professional experiences. In addition, they encourage students to deeply engage with, and take ownership of, their own learning activities, and in so doing, facilitate the development of a range of graduate attributes. Indeed, the recently developed DIT SMF has the capacity to help students develop many of the characteristics associated with the five DIT Graduate Attributes, and this can clearly be seen in Appendix C where these characteristics are mapped to the learning activities associated with the DIT SMF.

Regarding the professional practice of the group members lecturing in non-finance related disciplines, it is envisaged that faculty in the areas of law, tax, marketing and management will deliver SMF-relevant guest lectures, and there are plans to develop sub-committees comprised of students from these areas to provide on-going consultancy services to the SMF. Thus, the participation in an SMF is not limited to finance faculty and students, but is open to those from a range of business disciplines. Finally, an interesting piece of further research would be to assess the extent to which alternative authentic learning experiences may also achieve the DIT graduate attributes within the College of Business.

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Appendix A: Timeline of Establishment of DIT SMF

January 2018:

- MSc. Finance students approach Lecturer in School of Accounting & Finance to assist in setting up SMF in DIT.
- Draft Prospectus initiated.
- Logo designed.
- Facebook page set up.
- Executive Committee roles finalised with students who established fund in top positions.
- Advisory Board finalised with academic staff member as Chairperson.
- Women in Business section established to encourage more female students to participate in Finance with equal gender split on Executive Committee.

February 2018:

- Website set up with details of the SMF along with member profiles.
- Training provided by academic staff.
- Sector Heads established with analyst agreeing to work on different sectors. Over 30 students voluntarily involved with SMF as analyst and Sector Heads.
- Sponsorship letters designed to send to firms.
- List of firms drafted to seek funding.
- Emails and letters sent to 20 firms in Financial Services Industry.
- Approval obtained from Dean of the College of Business and President of DIT.
- Trading competition launched with €2,000 worth of prizes on offer from Geneva Trading in College-wide competition. 127 students entered the 6 week competition.

March 2018:

- Stock pitches take place in front of Executive Committee.
- Best stock pitches are selected by Executive Committee to invest in via online virtual platform.
- Stock decisions presented to Advisory Board and agreed upon before selection.
- Academic staff member and CEO of SMF (student) presents work undertaken by students to date in front of Goodbody Stockbrokers Managing Director and Student Managed Fund Department.
- Date for fund launch night agreed. All students engaged in SMF agree to assist for the launch night with different roles undertaken.

April 2018:

- End of year annual report developed by Executive Committee and Advisory Board which will be presented at launch night.
- April 12th 2018: DIT SMF officially launched by President of DIT with over 120 guests including corporate sponsors in attendance.
- Prizes presented to students who won trading competitions and to students with best stock pitches.
- Goodbody Stockbrokers announce €30,000 funding for DIT SMF starting in September 2018.
- DIT become first SMF to obtain funding within 3 months. All other colleges in Ireland took 3 years of virtual trading before sponsorship was obtained. A major part of this was due to the

strong presence of academic staff being involved, the creating of a new module to ensure the longevity of the fund and the support of the College.

May 2018:

- Interviews took place for roles in Executive Committee for 2018/19 academic calendar year.
- Initial letter required to state reason for wanting to be a part of SMF.
- Initial interview took place in front of outgoing Executive Committee.
- Executive Committee make recommendations in front of Advisory Board who agreed. Everyone who applied got a position and agreed their roles prior to the summer break.
- “Investment and Portfolio Management” module designed for Economics & Finance and Accounting & Finance students for upcoming academic year.
- This module was agreed by the module amendment committee and will be implemented in September 2018.
- The SMF will be a major part of this module.

September 2018:

- Industry expert and experts from Goodbody Stockbrokers will be undertaking training workshop for students to assist with SMF.
- SMF officially will begin trading with real money.
- “Investment and Portfolio Management” module will begin.

Appendix B: A Step-by-Step Guide to the Establishment of an SMF

Step	Requirement	Action
1	Motivated Students	A student managed fund is student led and requires motivated students who are willing to engage in extra-curricular activities.
2	Academic Staff Members	In order to ensure there is a proper structure and point of contact to represent the college, an academic staff member(s) is required to be involved to oversee the set up phase of the student managed fund.
3	Prospectus	For any investment fund a prospectus document setting out the rules, regulations and governance of the fund is necessary. The same applies to a student managed fund. This is the main document of rules which students will follow when trading.
4	Executive Committee and Advisory Board	It is very important to have an Executive Committee which is student led and an Advisory Board which is made up of academic staff members and industry experts. The Advisory Board is seen as an oversight committee to ensure the highest level of governance is in place and to make sure the students are reporting their results to an independent panel.
5	Training	Training should be provided to students on the different types of valuation techniques and how to place trades. If this is not incorporated into a module then it is provided voluntarily by the academic staff or by industry experts who will provide their expertise and give students a real insight into how things work in the industry.
6	Roles for Students	It is important to assign roles to students who wish to be involved. This is mainly based on different sectors where some students will be sector heads and others will be sector analysts where they will be the ones analysing the companies. There is no limit on the amount of analysts reporting to a sector head, but ultimately the sector head and their team will be reporting to the student executive committee who will make decisions as to what stocks should be traded.

Appendix C: Mapping of DIT Graduate Attributes to DIT SMF Learning Activities

Engaged Attribute Characteristics	DIT SMF Learning Activities
Global Citizen	<ul style="list-style-type: none"> • Opportunities to collaborate with International Colleges
Ethical	<ul style="list-style-type: none"> • Present information objectively and truthfully • Students only invest socially responsible companies
Motivated Self-Starter	<ul style="list-style-type: none"> • Encourages students to work outside their comfort-zone • Students work without the guidance of academic staff
Excellent Communicator	<ul style="list-style-type: none"> • Presenting stock pitches • Reporting on company valuation and future company outlook • Team meetings

Achieving Graduate Attributes through Authentic Learning: The Case of Student Managed Funds (SMF)

What is a Student Managed Fund?

- Investing with real money;
- Student-led and managed;
- Supported by dedicated faculty;
- Real world application of students' learning;
- Developing skills in business analysis, investing, risk management, equity valuations, etc.;
- Undertaken in a collaborative learning environment
- References: Kahl (1997); Lawrence (2008); Neely & Cooley (2004).

SMF = Authentic Learning + Graduate Attributes

- Characteristics of authentic learning: collaborative in nature, develop discipline specific knowledge, reflect the wider curriculum, and are located in complex real world problems (Stein, Isaacs & Andrews, 2014).
- Understanding graduate attributes: non-disciplinary specific qualities and capabilities which students should develop during their time in higher education (Bowden, Hart, King, Trigwell & Watts, 2000).
- SMF represents an authentic learning experience that offers students the opportunity to develop a range of non-disciplinary specific graduate attributes

Key tips for establishing an SMF

#1

Student participation linked to module assessment.
- Encourages increased engagement and motivation (Neely & Cooley, 2004).

#2

Timetable allowance for key faculty.
- Overseeing an SMF is time-consuming for academic staff (Mallet, Belcher & Boyd, 2010).

#3

Module linked to SMF should span the academic year.
- Students can fully benefit from participation (Cooley & Hubbard, 2012).

#4

SMF should incorporate socially responsible investing (SRI).
- SRI is often omitted from investment modules and textbooks (ClineBell, 2013).

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