

Exploring the Higher-Level Degree Apprentice student's perspective on the need for Sustainable Education in Northern Ireland.

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British Academy of Management Conference
Track 30. Sustainable and Responsible Business
University of Sussex

Abstract

The world is on fire (Mahdawi, 2019), business and society continue to consume more than the earth can provide and resources are quickly running out. Carbon emissions into the natural atmosphere are at an all-time high (USDC, 2022) and are expected to have not yet peaked (IPCC, 2022; Mitchell et al., 2000). Climate change is heading for an increase of at least + 2.7 to + 3.1 degrees against a target of + 1.5 degrees (Samset et al., 2020). This should be enough to alarm policy makers and society.

Higher Education (HE) institutions and Business Schools are under pressure to do more and to be the change they wish to see in the world (Cortese, 2003). The United Nations (UN) have introduced The Principles of Responsible Management Initiative (PRME) to encourage Business Schools to be more sustainable (PRIME, 2020). Scholars argue that the time is ripe for HE institutions to lead change with stakeholders demanding change (Moore, 2005), students are increasingly from Generation Z and are said to be the most demanding generation yet for climate change response, calling for change in institutions.

Thürer et al., (2018) argues that the HE sector is experiencing a 'golden age' for advancing sustainability in higher education. However, there remains a limited understanding in the literature for how sustainability is embedded into curricula, particularly in closed-cohort apprenticeship programmes and how Sustainable Education (SE) is experienced by students. This is particularly relevant for students in Northern Ireland as the existing research focused on the UK is generally concentrated on England (Rowe, Perrin and Wall, 2016).

Further, the concept of a typical HE student, attending University directly from college, and without experience of employment is quickly becoming outdated. The political reform of university funding has caused significant disruption in the industry. Students are increasingly likely to be completing a degree on a part time basis, whilst in employment, funded by their employer. The funding for Degree Apprenticeships (DA) is now embedded into a levy for large organisations (with payroll exceeding £3 million) meaning the landscape for HE is quickly evolving. The typical HE student is becoming more demographically diverse, with a range of different experiences and expectations.

There is limited understanding in the literature as to how higher-level degree apprenticeship (HLA) students, who are in full time employment, and part-time study understand and perceive sustainable

education. Generation Z are said to be the most critical of business activity yet, and demanding of change in society, however it is not understood how this is influenced by the practicalities of employment and from the perspective of Northern Ireland.

The method adopted for this study was a questionnaire in the post-positivist tradition issued to a cohort of 50 DA students in the Business Engagement Unit (BEU) of Ulster University Business School (UUBS). 47 usable questionnaires were returned, representing a completion rate of 94% and representing 33% of all new apprentices in Northern Ireland.

The research sought to understand Generation Z's perceptions of sustainability, finding that sustainable education and responsibility of business were significantly important issues for them. Their future leadership role, and the current role of leaders in becoming more sustainable was also highlighted as being important. Finally, the role of embedding sustainability into curricula, and teaching solutions to societal problems was highlighted as being an important part of the needs of higher degree apprentice learners.

Introduction

Courtese (2003) argues that Higher Education (HE) *'can serve as a model of sustainability by integrating all aspects [of sustainability] into campus life.'* KPMG (2011) identified similar perspectives in industry, with 93% of CEOs viewing sustainability as a business issue, with 53% expecting to increase spending in this area over the next decade. Business Schools are under increasing pressure to focus on environmentalism with conferences, teaching and publications, ever more focusing on sustainability and responsibility (Handy, 2012). Business Schools are increasingly turning their attention to creating teaching, learning and assessments that consider sustainability, responsibility, and ethics in business.

Friedman (2007) famously claimed that the *'only responsibility of business was business'* and *'business'* should only be concerned with making a profit, so long as they *'stayed within the rules of the game,'* the paradigm for business responsibility has shifted, largely in part because of the values and expectations of new generations, and business is re-evaluating its own position relative to sustainability and responsibility. As a result, accrediting bodies are increasingly requesting commitment to sustainability from universities in relation to taught programmes (AACSB, 2020).

Sustainability can be considered one of the great challenges facing humanity today and addressing the concept of sustainability includes not only engaging with environmental issues but also making decisions to improve social and economic issues in society (Guinot et. al., 2022). Hence, in any regional economy there is a need for HE and business partnerships to evaluate frameworks and models to develop skills and competency levels for sustainable innovation.

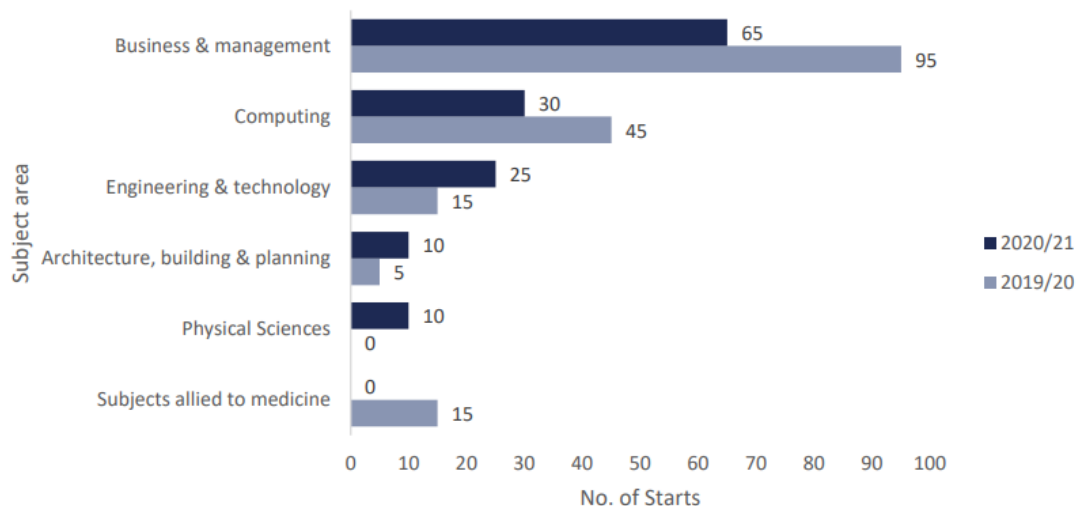
In Universities, students are increasingly from Generation Z. Generation Z students increasingly desire to work for organisations who take sustainability seriously and *'stand ready to take action'* (Cone, 2019). Students and Generation Z learners are calling for a voice in learning and society (Cook-Sather, 2015). Ethics, sustainability and corporate social responsibility (CSR) must be taught to future leaders and managers (Bento et al., 2022) and is particularly relevant to business school students (Haertle et al., 2017). Rashid and Ibrahim (2002) argue that the perceived importance of sustainability and responsibility is even greater still in females, arguing that females have a greater understanding of its importance to curricula, compared to their male counterparts.

HE institutions have traditionally sorted students into homogenous groups and considered their needs to be broadly similar in nature. This is becoming increasingly difficult for HE providers as the nature of students and their needs is quickly evolving. The introduction of higher-level degree apprenticeships (HLA) is said to be one of the most significant changes to the higher education landscape in recent times (Rowe, Perrin and Wall, 2016). Jeffery (2016) argues that degree apprenticeships offer *"the greatest opportunity ever seen for anyone concerned with skills and employment."*

Degree Apprenticeship's offer learners the benefits of studying in higher education, on a funded basis, and without accumulating debt. Further, as DA learners are in employment, they are not only able to earn and learn, but they also complete their apprenticeship degree programmes with significantly more work experiences than their full-time 'traditional' counterparts (Rowe, Perrin and Wall, 2016). Organisations have even begun to re-configure their training policies to enable registration onto relevant programmes and to improve retention and organisational commitment. Closed cohorts of DA programmes are becoming the norm for HLA students who are employed by large multi-national corporations. As a result of this, Bravenboer (2016) advocates for the power of co-design and delivery of degree programmes, advocating the significant benefits of collaboration between employers and universities.

Zundans-Fraser and Bain (2016a, p. 841) argue universities have been too slow in responding to embedding sustainability and responsibility into the curriculum and suggest they need to '*critically examine their current situation and evaluate available options.*'

In Northern Ireland, higher level degree apprenticeships have grown significantly, accounting for 140 'new starts' in 2020/2021 with the vast majority of these places at Ulster University (105 versus 35 at Queens University). Ulster University have established a dedicated unit to support the continued integration of business and academia, the Business Engagement Unit. This is reflected in the statistics for Northern Ireland, with Business and Management programmes accounting for 46% of the places on HLA programmes in Northern Ireland (64 starts).



Source: [Higher Level Apprenticeships Starts at Higher Education Institutions in Northern Ireland, Academic year 2019/20 \(economy-ni.gov.uk\)](https://economy-ni.gov.uk/higher-level-apprenticeships-starts-at-higher-education-institutions-in-northern-ireland-academic-year-2019-20)

The literature considering the process of embedding sustainable education into curricula is limited, but emerging. The literature focusing on UK institutions is primarily focused on England, where the latest data forecasts 'starts' of over 374,000 students in 2021/2022 (Department for Education, 2022). Considering the relatively low numbers in Northern Ireland, it is perhaps unsurprising that academic attention has focused on the larger market of England, however this creates a knowledge gap in Northern Ireland.

Sandri (2022 p. 115) questions if sustainable education is intended to teach *about* sustainability, or for sustainability, and argues that '*sustainability education needs to develop capabilities amongst citizens and professionals to engage with, and respond adequately to, wicked problems.*'

In line with Sandri's (2022) arguments, higher level degree apprentice students are already in professional roles, and have some exposure to organisations, and some power to respond to '*wicked problems.*' Further, employer led DA programmes have the potential to address Bravenboer (2016) desire for integrated programmes, and there is evidence that this has happened in the Northern Irish sector, despite the lack of academic attention.

The role of sustainable education within the context of higher degree apprenticeship learners is not fully understood. Indeed, relatively little is known about DA students and their experiences in HE, with most academic research concerning students, focusing on their full-time counterparts. This paper will therefore consider the role of HLA, DA students relative to their understanding of

sustainable education and its continued integration into curricula in Northern Ireland, asking the following questions.

- How do higher level degree apprentice students perceive sustainability in higher education?
- Do higher level degree apprentice students perceive sustainability to be an important part of their degree programmes?
- Do higher level degree apprentice students perceive that they have a role to play in the process of sustainable development?

Literature Review

The purpose of this review is to critically understand what is already known about the topic under investigation (Saunders, 2012; Thomas, 2017). The particular style of review adopted is defined as a '*conceptual literature review*' to '*synthesise areas of conceptual knowledge that contribute to a better understanding of the issue*' (Jesson, 2011, p. 76). This review is useful for a study that is seeking to explore and understand an issue, rather than it is testing a particular hypothesis. In the case of this project, a conceptual literature review is useful because the project brings together concepts from different academic disciplines.

Higher Degree Apprenticeship

The environment of higher education has changed significantly (Dearden, van der Erve, Belfield, & Britton, 2017), from the introduction and subsequent increase in fees (UCAS, 2020), to the removal of the cap in student numbers (Hillman, 2015) (and the much more recent rumoured re-introduction (Adams, 2020), the emergence of universities as providers of '*mass participation*,' where 50% of young people enrol into Universities (Coughlan, 2019), to the introduction of the Research (Research Excellent Framework, 2020) and Teaching Excellence frameworks (Office for Students, 2020) and measuring of graduate outcomes (Graduate Outcomes, 2020).

The introduction and impact of student fees and their gradual increase has perhaps received the most significant attention in the sector and popular press (Wilkins, Shams, & Huisman, 2013). Importantly, in England, the increase in fees from £3,000 to £9,250 did not lead to a reduction in student numbers, (Bolton, 2020). In Northern Ireland, the fees for residents are capped at £4,630 (House of Commons Library, 2022). However, significant concern remained in the minds of students who would graduate from university with a significant debt and for the poorest students a debt of up-to £57,000 in England (Dearden et al., 2017). There have been significant questions as to whether university degrees still represent value for money (BBC, 2020).

In an attempt to upskill the workforce, the UK Government introduced Higher Level Degree Apprenticeships (HLA) funded by a '*levy*' - essentially a payroll tax on private organisations that would be lost if companies did not use the funding (Office for Students 2020). HLAs go some way to address the concerns of a typical Undergraduate student, the student would leave with no debt, several years' experience at work, and in most cases full time employment (Lee et al., 2012).

The outward facing government agenda in this case was to improve social mobility for those without degrees (Lee et al., 2012). Hillman (2015) was critical, arguing that the introduction of HDAs was simply a mask to front the significant fall in part time student numbers post increases in student fees. Further, the accessibility for non-traditional learners, including working class students (Reay & Crozier, 2009) remains problematic. In particular the role of MBA apprenticeships have been criticized for their use of levy funding for senior executives (Moules, 2020).

Universities have been forced to adapt in their delivery. HDA students are unable to accommodate traditional undergraduate teaching schedules that might be split over five days, twelve weeks and potentially providing teaching for an hour or less per day. The funding model requires employers to provide at least 20% off the job training which often translates to one day's learning per week and is often bunched together for the purposes of delivering '*block teaching*' where students attend university for an intensive block where an entire module is delivered over the course of several days (Lambert, 2016; Lee et al., 2012). The government describes degree-level apprenticeships as a real alternative to university (Hillman, 2015) whereas Lambert (2016) describes them as propaganda and not achieving what they claim. Research has demonstrated that over 91% HLA students graduate with a 2:1 or above and on average their grades are 10% higher than their full-time counterparts (Saville, Birdi, Hayes, Higson, & Eperjesi, 2019) demonstrating significant value to the learner in terms of outcomes.

Part-time HDA learners engage with university systems, facilities and curricula in different ways to their full time counterparts. They have different experiences, and drastically more pressures on their time. This is important, and largely un-explored in the literature, Generation Z are critical of business attitude and approach to sustainability, and wish to be the change that they want to see in the world. Sustainability is being embedded into curricula, and for part-time learners, however the students reaction and experience of this is largely unknown, particularly in Northern Ireland.

Further, the introduction of apprentice students presents additional stakeholders to the student-university experience; namely the employer and their needs. Closed-cohort degree programmes have the power to be tailored to the employer and practically useful in work (Bravenboer, 2016).

However, while Hughes and Saieva (2020) advocate for the positive outcomes for students when universities and employers working together in course design, academics remain best places to teach academic theory as opposed to company policy (no matter how applied their courses claim to be). Closed-cohorts have the potential to lead to '*company specific degrees*' that are potentially only relevant to a single employer, and this is not necessarily the goal of higher education. The connection between employer, employee and university becomes vitally important, and introduces a third stakeholder in the traditional pairing.

Thus far, universities have assumed (perhaps through ignorance) that the needs of HDA learners are broadly the same as full time undergraduates and have done little in real terms to understand their specific needs beyond altering programme delivery schedules. In an environment where HDA student numbers are increasing and could become a '*real*' alternative to university (Hillman, 2015), these questions will need to be answered and new systems put into place. Hughes and Saieva (2020, p. 225) argue that this process provides '*bumps in the journey*' and the ultimate goal of HLA programmes is to '*widen participation*.'

Sustainability in Higher Education

Sustainability has become an ever-increasing problem in society; worldwide CO₂ emissions have increased significantly, from 320 parts per million (ppm) in 1960 to around 420ppm in 2020 (USDC, 2022). If humanity did nothing to address this, the climate would be heading towards an increase of +4.1 and +4.8 degrees of change to the climate over the next century. Indeed, even current climate policy as a result of the COP summit and the Paris agreements are on track to achieve climate change in the region of +2.7 to +3.1 degrees (IPCC, 2022; Langsdorf et al., 2022; Mitchell et al., 2000).

As a result of climate change, in Europe there are risks to people, economies, marine life water scarcity and losses in crop production (IPCC, 2022); in Central and South America, risks to life through flooding,

severe weather and coral reef destruction; in small islands the risk of total erosion through increased sea-levels; and in Africa, the risk of species extinction, flood, water and energy systems and the potential for climate refugees through excessive heat (IPCC, 2022; Mitchell et al., 2000). Sustainable Education seeks to address gaps in curricula to address these issues from a business perspective (McKeown et al., 2002).

The problems associated with the climate are significant, and business are beginning to notice. Friedman (2007) famously claim that the '*only responsibility of business was business*' and '*business*' should only be concerned with making a profit, so long as they '*stayed within the rules of the game*,' more recently, the paradigm for business responsibility has shifted, and business is re-evaluating its own position relative to sustainability, responsibility and ethics. Laasch and Conaway (2015) argue that the domain for business responsibility is changing, from profit focused business models, towards organisations taking responsibility for '*sustainability, responsibility and ethics*.' Elkington (1999) went a step further, arguing that business should focus on the triple bottom line, people, planet, and profit. This re-emergence of business responsibility is emerging in taught programmes, and particularly where DAs are being developed with industry and business partners (Bravenboer, 2016)

The overall relationship between business and responsibility is evolving, and with this, the expectations of stakeholders and consumers, particularly Generation Z. Generation X, Y and particularly Z are more aware of the responsibility of business and its direct impact on the climate.

Visser (2011) details the ages and stages of Corporate Social Responsibility (CSR) within business, from a model of greed, where business is reactionary to external pressure, to philanthropy where money is donated to external causes, but the role of business remains the same, through to business either taking responsibility through management or product changes. The model for CSR is useful to understand how business might engage with sustainability or responsibility, however critical researchers should be aware of the potential for '*greenwashing*' where organisations claim virtuous behaviour that is either not genuine or accurate as described. The Advertising Standards Agency (2022) have recently outlawed '*greenwashing*' claims that cannot be underpinned through evidence.

Rashid and Ibrahim (2002) assessed students perceptions of sustainability, relative to business outcomes. Finding that involvement in local communities would improve profitability in organisations over the long run (69%), that organisations should live up-to societal expectations (56%). 42% agreed that organisations could not maintain competitive advantage over the long run without sustainability strategies.

Rashid and Ibrahim (2002) further argued that female students were more accepting than male students towards implementing sustainability than their male counterparts. The particular research was gathered in Malaysia leading the author to question its usefulness in the context of HLA students in Northern Ireland.

Haski-Leventhal, Pournader and McKinnon (2017) adapted Rashid and Ibrahim's (2002) study to focus on students values relative to CSR, attitudes, and education. They emphasised the importance of understanding where students were on their educational journey, their specific course and gender within the context of post-graduate students in Australia.

Young and Nagpal (2013) identified the significant challenges of updating programmes to reflect sustainability in curricula Fleming and Oswick (2014) claimed that the current teaching in sustainability is questionable at best. While there has been limited research that identifies the expectations and values of students (Clements et al., 2014), the literature has not sought to ask the

students perspective on sustainability in education, particularly in the context of employed, degree apprentice students, and from the perspective of Northern Ireland.

Summary

The Literature Review has demonstrated a connection between the emerging funding model for universities, the emergence of the '*Generation Z learner*' and the higher education funding arrangements. Further, the typical Generation Z learner has increased expectations and demands from society in terms of their obligations to the environment, and particularly an organisation's reaction to these issues. The emergence of employers as significant stakeholders to the University and student relationship has the power to further alter the landscape for higher education.

Method

Methodologies provide an outline of the theoretical choices that were adopted for their particular study. This includes justification for the research design and execution in line with current knowledge, and philosophical position respective to the research question. In the domain of social research and the social sciences, methods are primarily motivated by developments and changes in society (Bryman, 2016), in contrast to the natural sciences which are more concerned with nature and objectivity. In the context of this project, the changes in society relate to the context of the funding model for higher education, the associated evolution of new stakeholders within the sector, and the emerging needs for University level learners from Generation Z, who are employed.

Methodologies are concerned with the rationale and logic behind establishing truth and understanding the basis of reality in research (Johnson & Duberley, 2000), this is in contrast to '*methods*' which are more broadly concerned with data collection approaches (Saunders et al., 2009).

In the most part methods are often confused with methodologies, and the two should not be used interchangeably. The foundation of '*truth*' or '*truths*' can vary by philosophical tradition, and has significant different interpretations from one tradition to another (Burrell, 1979; Hassard, 1991).

Research in higher education has often been problematic, doing little to account for behaviour of students in favour of treating all students as one homogenous group. Research in HE does little to account for subjectivity and the changing nature of students, including their Generation (X, Y and Z), or their employment (in this case, part-time learners). As is the case in ethical theory, behaviour accounts for our actions beyond morality (Ligeti & Oravecz, 2008), as academic researchers we spend more time theorising than we do acting and little is known about this segment of learners. The philosophical position of the research needs to respect the position of the literature, its considerations for truth, while at the same time understanding the student's own position. The research needs to allow for meaningful inter-subjectivity on the part of the participant.

The project seeks to establish meaning for Generation Z learners in relation to Sustainability, within the context of employed, higher degree apprenticeship students. The practicality of conducting research with students who are full-time employees and part-time students must also be considered. Unlike their full-time counterparts, they cannot be expected to attend campus multiple times per week, and in some cases, will not attend campus on a weekly basis, or at all.

In consideration of this, the adopted position most closely aligns with '*neo-empiricism*' – or '*post-positivism*' approaches. This allows for subjectivity on the part of the participant, whilst allowing for objective conclusions. The researcher adopted an online questionnaire issued to HLA learners in the post-positivist tradition. The questionnaire allowed for quantitative, Likert style questions, but also allowed for qualitative style responses, in case the student wished to elaborate further on a particular

point. As the project was exploratory and seeking to understand the student experience of a topic. The questions were open ended and sought to understand where students saw value in their taught programmes in relation to sustainability.

The questionnaire was issued to a group of 50 Level 4 'new starter' apprentices (Level 4, First Year) in the Business Engagement Unit of Ulster University Business School. In total 47 questionnaires were returned from the students, accounting for a 94% completion rate. 47 responses accounts for 33% of the 'new starts' (Level 4/First Year) higher level degree apprentice students in Northern Ireland for 2021/2022. In the context of 'business and management' degree apprenticeships, there were 95 'new starts,' meaning the response rate was 49% overall in context.

The method sought to understand key issues as identified from the literature review. The questionnaire adopted a five-point Likert scale, ranging from 'strongly disagree' to 'strongly agree' with one position for neutrality. The questionnaire included reverse coded questions to assess reliability of the data. The questionnaire sought to understand students' perspectives and attitudes towards their understanding of sustainability (Cone, 2008;2019), their attitude towards sustainability in business (Handy, 2012), personal commitment to sustainability (Meyer, Allen and Smith, 1993), their perspective on sustainability relative to their parents' generation (Jeffrey, 2016), their role in practicing sustainability (Cook-Sather, 2007), their leaders role (Thürer, Tomašević, Stevenson, Qu, Huisingh, 2018.), and the role of sustainability relative to their degree (Moore, 2005).

In line with the inter-subjectivity allowance of the adopted philosophy, the questionnaire also sought to understand the student's perspective of their university's role in sustainable education, the biggest challenges facing business now and, in the future, and any other perspectives they wished to add to the topic. The qualitative questions received a surprising uptake, with 41 students making qualitative style comments in the questionnaire.

In the process of analysis, Field (2018) argues that reporting the reliability of data from surveys is a key stage in understanding the quality of the data. Kimberlin and Wsinterstein (2008) argue that testing the reliability is important as it allows a researcher to reduce error in the measurement process. This is particularly prevalent when new scales are being developed and tested.

Where scales report a with a high 'internal consistency,' the researcher can be confident that it has been completed properly by respondents. The internal consistency measures that the data is reliable in the sense that questionnaire items are measuring the same constructs correlate (Cronbach, 1951). In the case of Cronbach Alpha 1.0 would represent a perfect correlation between the variables. The internal consistency of the scale was measured as being .806 which is considered to be 'good.' (Pallant 2010).

Once the reliability of the data was established, the researcher sought to correlate the variables. Pallant (2010 p. 128) explains that correlations 'provide an indication that there is a relationship between two variables' but does not 'indicate that one variable causes another,' nor does the researcher wish to make claims in the positivistic tradition. Field (2018) argues that a strong correlation is demonstrated when $r > 0.75$, and a moderate relationship is demonstrated above 0.5. Weak relationships are observed between 0.25 and 0.5 and no relationship is proven when $r < 0.25$. The results section will demonstrate the findings of the analysis, with significant correlations observed in the data.

Results and Discussion

The analysis demonstrated significant relationships between the variables. The questionnaire sought to understand the student's perspective of embedding sustainability into curricula, particularly from the perspective of higher-level degree-apprenticeship learners. The literature has done little to account for this sub-section of learners, with Northern Ireland being particularly neglected in the literature.

The questions in the questionnaire sought to understand degree apprentice students' perspective on a range of topics relating to sustainability, from embedding sustainability into curricula, to their role in being sustainable, and their employer's role in sustainability. The summary of the questions in the questionnaire can be seen in Figure XX.

Questionnaire Question	Theme of the Question
1. <i>Responsible Business is an Important Business Issue</i>	Importance of Sustainability and Responsibility
2. <i>Sustainable Business is an Important Business Issue</i>	Importance of Sustainability and Responsibility
3. <i>I think that Sustainable and Responsible Business is an Important part of my degree</i>	Importance of Sustainability and Responsibility in Education
4. <i>Sustainable and Responsible issues are important to me</i>	Personal Importance of Sustainability and Responsibility
5. <i>Sustainable and Responsible Business has an important role to play in Business Education</i>	Importance of Sustainability and Responsibility in Education
6. <i>I do not think Sustainable and Responsible Business practices are important (R)</i>	Reverse Coded Question: The Importance of Sustainability and Responsibility in Education
7. <i>My beliefs have changed as a result of studying responsible business</i>	Personal Importance of Sustainability and Responsibility
8. <i>Compared to my parents generation, my generation place more importance on Sustainability and Ethics in everyday life</i>	Personal Importance of Sustainability and Responsibility, change over Generations (Generation Z)
9. <i>I have a role to play in Sustainability</i>	Personal Importance of Sustainability and Responsibility, change over Generations (Generation Z)
10. <i>I would choose to work for an Sustainable Ethical Company over an un-sustainable and un-ethical company</i>	Personal Importance of Sustainability and Responsibility in Business
11. <i>Sustainable and Responsible Business is an important issue for Business Leaders</i>	Importance of Sustainability and Responsibility in Business
12. <i>As a future leader, Sustainable and Responsible Business will be important in my career</i>	Importance of Sustainability and Responsibility in Business
13. <i>It's important to study real world, current business issues as part of my degree</i>	Importance of Sustainability and Responsibility in Business and Education
14. <i>Qualitative Text Box: What do you think the University should be doing in terms of Corporate Social Responsibility?</i>	Attitude of Business relative to Corporate Social Responsibility

15. Qualitative Text Box: What would you say is the biggest sustainability challenge for business now?	Development of Business relative to CSR
16. Qualitative Text Box: What would you say is the biggest sustainability challenge for business in the future?	Attitude of Business relative to Corporate Social Responsibility
17. Qualitative Text Box: What would you say are the biggest challenges facing society today?	Attitude of Business relative to Corporate Social Responsibility
18. Qualitative Text Box: How well is University preparing you for your future in work?	Attitude of Business relative to Corporate Social Responsibility
19. Qualitative Text Box: Do you have anything else to say?	Personal Perspective

The Questionnaire was analysed in SPSS and Excel. The table in Figure XX demonstrates the mean scores for each item alongside the standard deviation of the data. The mean scores were consistently high, with the exception of the reverse coded question, which was significantly lower (1.89). The standard deviation is low across the data set, with most scales under 1.

The correlation analysis demonstrates significant meaning in the data. There were strong correlations between the acceptance that sustainable business was an important issue, and responsible business (95% confidence), personal importance of sustainability and the importance of responsibility of business also scored highly 0.62 (95% confidence). Personal importance of sustainability also correlated strongly with a desire for students who would choose to work for a '*Sustainable Ethical Company over an un-sustainable and un-ethical company*' 0.62 (95% confidence). Significant relationships were also observed between the students' future careers, their leadership in the future, and their role in sustainability (0.63, 95% confidence) and the acceptance that 'real world issues' form part of their education 4.38.

The data demonstrated the importance students place on their role in sustainability, (4.3), the role of education, and their degree considering real world issues (4.38) and the importance of responsibility (4.34) of business and sustainability in business (4.53). There were strong correlations observed between students' beliefs '*being shaped by sustainable education*' in curricula, and the importance of sustainability in education (0.56, 95% confidence). Predictably, there were no correlations observed between the reverse coded scale (I do not think Sustainable and Responsible Business practices are important) and the other scale items. These results resonate strongly with Haertle et al (2017) arguments who argued that education in sustainability was particularly relevant to business. This study makes the important connection between Generation Z and higher learner degree apprentice students understanding and advocacy for the need of sustainable education.

The table in Figure XX demonstrates significant meaning and correlations in the data. Considering the data sought to test the theoretical interconnected relationship between Generation Z, their education and sustainability in employment, it is pleasing to see such strong relationship consistently between scales.

Figure XX – Summary of Means, Standard Deviations, Correlations and Significance of the Data

	Mean	S/D	1	2	3	4	5	6	7	8	9	10	11	12
1 Responsible Business is an Important Business Issue	4.34	0.56	-											
2 Sustainable Business is an Important Business Issue	4.53	0.54	0.60 **	-										
3 I think that S/ble and R/ble Business is an Important part of my degree	4.09	0.77	0.28	0.46 **	-									
4 Sustainable and Responsible issues are important to me	4.13	0.87	0.62 **	0.54 **	0.21	-								
5 S/ble and R/ble Business has an important role to play in Business Education	4.17	0.66	0.30 *	0.34 *	0.43 **	0.41 **	-							
6 I do not think Sustainable and Responsible Business practices are important	1.89	1.17	-0.14	-0.18	0.03	-0.20	-0.03	-						
7 My beliefs have changed as a result of studying responsible business	3.38	1.04	0.11	0.28	0.41	0.18	0.34 **	0.19	-					
8 Our generation place more importance on S&E in everyday life	4.23	0.80	0.44 **	0.45 **	0.52 **	0.38 **	0.56 **	-0.13	0.35	-				
9 I have a role to play in Sustainability	4.30	0.62	0.20	0.42 **	0.35 *	0.33 **	0.24	-0.04	0.15	0.12	-			
10 I would work for an S/ble E/cal Company over an un-s/ble and un-e/cal company	4.00	0.95	0.44 **	0.58 **	0.15	0.62 **	0.41 **	-0.19	-0.11	0.34	0.33 **	-		
11 Sustainable and Responsible Business is an important issue for Business Leaders	4.40	0.61	0.54 **	0.38 **	0.25	0.47 **	0.57 **	-0.18	0.26	0.46 **	0.25	0.44 **	-	
12 As a future leader, S/ble and R/ble Business will be important in my career	4.40	0.57	0.30 *	0.54 **	0.50 **	0.37	0.55 **	-0.19	0.13	0.30 **	0.63 **	0.47 **	0.51 **	-
13 It's important to study real world, current business issues as part of my degree	4.38	0.64	0.41 **	0.40 **	0.28	0.41	0.55 **	-0.06	0.16	0.36 **	0.31 *	0.35 *	0.64 **	0.45 **

n = 47. * < 0.5 ** < 0.1

The results from the analysis demonstrate the significant importance that students attach to the topic of sustainability. The Cone Study (2008, 2019) found that Generation Z perceive the environment to be the number one issue facing society, above health, poverty and human rights. The Cone (2019, p. 5) study argues that *'94 percent [of Generation Z] believe we need to come together to make progress on important issues.'* The results here demonstrate similar conclusions, with 86% of respondents agreeing that 'I have a role to play in sustainability' and 91% arguing that responsibility is an important business issue.

The qualitative data demonstrates similar themes, the students remain concerned about the environment and their role in becoming more sustainable. Qualitative comments ranged from educational themes of *'teaching us'* and particularly *'teaching us more'* and increasing awareness *'make students more aware of it'* to *'enable students to put it into practice.'* One comment related to the nature of problematisation in universities, over solutions, *'teach us practical solutions, not just the problems.'* This comment is interesting and relevant in context, the respondent in question has clearly accepted the reality of the issue and wishes to move their focus to solutions. These arguments resonate strongly with Cortese (2003) position that Universities should focus on embedding sustainability into curricula. This is perhaps where Generation Z differs from earlier generations. The quantitative results demonstrated strongly that Generation Z perceive that they are more concerned than their parents' generation for the environment, scoring 84%.

In relation to Generation Z's perception of where universities should focus in relation to Sustainable and Responsible Education, the results were overwhelmingly in favour of increased education in relation to *'climate change'* and *'CO₂ emissions.'* The practical nature of business growth, and *'Companies trying to maintain quality products [and] services but trying to cut down on their processes and emission(s)'* were also highlighted as being problematic. The *'Cost of Living Crisis'* and *'Energy Usage'* was also highlighted by students as being a concern to them in relation to their education.

Considering Bravenboer (2016) arguments that degree apprenticeships must be developed in collaboration with employers, several students noted the usefulness of their learning in relation to sustainability for their daily work, *'the university is providing me with most recent and relevant information for my future in work'* others did not see the connection directly *'the teaching and courses could be adapted to current situations and crisis' - this is what will benefit the world and population in the future.'*

In relation to the final qualitative text box, and the opportunity for students to reflect on an aspect important to them, one respondent effectively summarised the issues faced by Generation Z.

I believe, while it is crucial for my generation to be taught about sustainability, there is too much of an assumption in the baby boomers and gen x that believe they don't need to worry because my generation will fix it. I also believe a lot of people in my generation have already accepted climate change as an inevitability and while they respond that climate is a big concern for them, they aren't necessarily doing anything about it

The results of the research are useful for academic staff and university policy makers. The Cone (2019) study advocated for the importance of sustainability from the perspective of Generation Z. Despite

the claims from Thüerer et al., (2018) that sustainable education is experiencing a golden age, there has been limited attention paid to Northern Ireland and apprenticeship programmes locally. Rowe, Perrin and Wall, (2016) advocated for the importance of sustainable education in England, however this was not elaborated beyond Great Britain.

Conclusion

The relevance of embedding '*Sustainability*' and '*Responsibility*' into education, notably in higher-level degree apprenticeships has been demonstrated. In the same manner that Rowe, Perrin and Wall, (2016) advocated for the benefits of sustainable education in England, similar results have been found in the context of Northern Ireland.

Further, the importance of embedding sustainability into curricula for part-time Generation Z students was also demonstrated. There appears to be little difference between the perspective of full-time '*unemployed learners*' and employed learners from Generation Z.

Generation Z students perceive sustainability to be an important factor in their education (4.09) and an important factor for business to consider (4.34, 4.53). The perception of sustainability included that their role was significant (4.30) and that as future leaders, they would have an ongoing relationship with responsible business (4.40). there was no difference in the student's perception of their future leadership role, and the current leader's role, relative to sustainability commitments (4.4).

Strong relationships were observed between Generation Z, their appreciation for business issues, their personal values (0.62) and their education in relation to sustainability (0.64). When provided with an opportunity to provide qualitative feedback, 41 (from 47) students elected to make qualitative comments, further demonstrating their interest and passion for the topic.

Qualitative comments in relation to sustainability related to the desire to increase sustainable education, arguing that they should be taught more about sustainability and the solutions to the climate crisis. There were also concerns that the previous generation had abandoned them with an issue of their making, and the role of business in becoming more sustainable. The students were also concerned for topical issues, including the cost-of-living crisis and the energy crisis.

Overall, the results demonstrate that Sustainable and Responsible Business is an important topic in relation to degree-apprentice students in Northern Ireland, and the Generation Z learners both value, and desire sustainability to be an important part of their education. There would be additional value in understanding the perspective of the employer in relation to the same topic, and for longitudinal work to assess impact over the medium and long term, particularly as apprentices progress in their careers.

The final concern from the results is the potential for an '*attitude behaviour gap*' (Wiltrud and Hirsch, 2015), of particular relevance to research considering students perceptions of their own virtues, is the perspective that they wish to show themselves in the best light, and are unlikely to answer against a question that asks if sustainability is an important topic. The researcher is also regretful to have not asked for further demographic data, including gender, to assess if there was difference in gender reporting as found in other work (Rashid and Ibrahim, 2002).

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