RESEARCH TITLE:

Understanding Qualitative Data on Student Engagement - A Sentiment Analysis and Co-research Study

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Dublin City University

Student Survey.ie

PGR Student Survey.ie

Foreword

The StudentSurvey.ie Steering Group is pleased to publish the results of five research projects analysing the qualitative data generated by the free-text response questions in StudentSurvey.ie and PGR StudentSurvey.ie. The results contained within this report make up one part of this research series.

Five projects were funded by research bursaries offered by StudentSurvey.ie in October 2022. The aim of the bursary awards was to promote greater ownership and encourage wider use of the StudentSurvey.ie and PGR StudentSurvey.ie data. Proposals for the analysis of the qualitative data emerging from StudentSurvey.ie and PGR StudentSurvey.ie were invited from members of the research community within the participating institutions, as well as commercial data analysis companies. The projects were completed in May 2023.

Each project is an independent project undertaken by qualified and experienced researchers on behalf of StudentSurvey.ie. Each project took a unique approach. The commonalities between all five projects are that they all utilised well-grounded methodologies, offer mechanisms for replication of the analysis in future years, and are innovative and authentic.

These results are the first of their kind for StudentSurvey.ie and PGR StudentSurvey.ie and we hope they are the first of many research projects involving the qualitative results of these surveys.

Student Survey.ie

PGR Student Survey.ie

What are StudentSurvey.ie and PGR StudentSurvey.ie?

StudentSurvey.ie (the Irish Survey of Student Engagement) is an annual national survey of student engagement among first year undergraduate, final year undergraduate and taught postgraduate students in higher education institutions in Ireland.

PGR StudentSurvey.ie (the Irish Survey of Student Engagement for Postgraduate Research Students) is a biennial national survey of student engagement among Masters by Research students and PhD students in higher education institutions in Ireland.

Both surveys are designed to focus on student engagement, namely the amount of time and effort that students put into meaningful and purposeful educational activities, and the extent to which institutions provide such opportunities and encourage students to engage with them. The data collected reflect students' self-reported perceptions of their experiences.

DCU School of Psychology

Name of Report: Understanding qualitative data on student engagement - a sentiment analysis and co-research study

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Background

This section serves as a foundational framework for a dual-method exploration of student engagement within higher education in Ireland. This section firstly explores the salient role of surveys as critical tools that enable research to reach a significant proportion of student voices. Subsequently, this section discusses the definition and multifaceted nature of student engagement, where prior research has provided comprehensive insight through the lens of both qualitative and quantitative methodologies. Lastly, this section discusses the context of the current StudentSurvey.ie report, and details why and how we will utilise a mixed qualitative and quantitative approach in order to gain a deeper understanding and insight into this corpus of valuable data.

Surveys matter!

Student surveys are one of the most commonly applied research designs for gaining insights into the student experience, and can help build valuable evidence into the quality of higher education (Goss, 2022; Thiel, 2019). Student feedback can help stakeholders make informed decisions regarding policies, curricula, teaching and learning, and support services that are pivotal for a range of student outcomes (Kember et al., 2002; Mishra, 2020; Webber et al., 2013). Increasingly, student surveys are not limited to the evaluation of academic outcomes. As evidenced by the National Survey of Student Engagement (NSSE) – the (US-based) largest international collaboration yet regarding students' engagement in higher education – surveys can help institutions, researchers, and policy-makers alike gain insight into the broader

areas such as campus culture, diversity and inclusion, the overall student experience, and measure the evolution of such themes over time (Coates et al., 2022). Indeed, in recent years, there has been a growing recognition of the value of using both qualitative and quantitative methods to collect student feedback. While quantitative analysis can provide valuable insights into the prevalence and magnitude of specific issues across different regions, qualitative analysis can provide more depth and richness of understanding of these issues.

Student Engagement – understanding a fuzzy literature

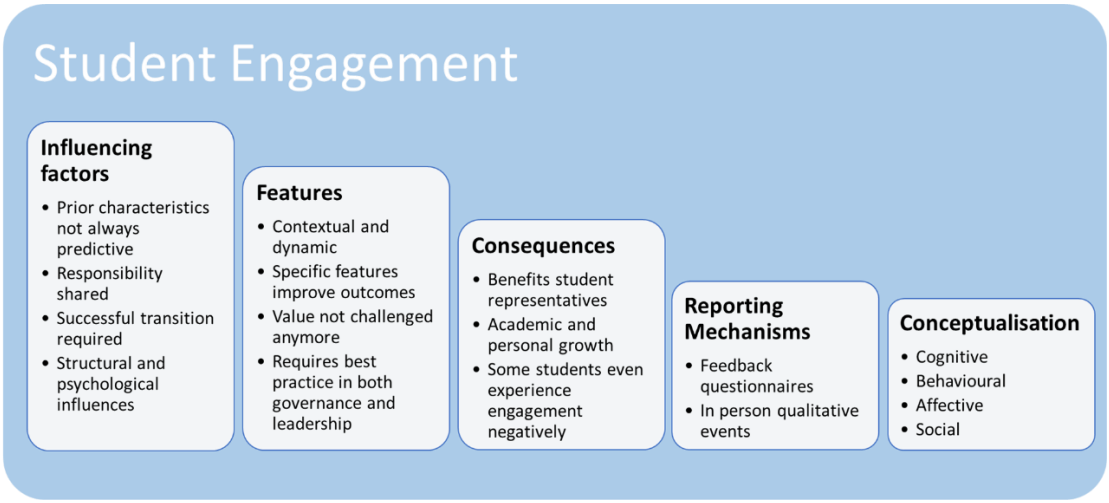
Student engagement has been associated with a variety of positive academic outcomes including achievement, information retention, and persistence (Kuh et al., 2008; Lei et al., 2018). Numerous studies have shown student engagement to be a salient aspect of quality education (Lei et al., 2018; Roorda et al., 2017; Snijders et al., 2020). Conversely, 'disengagement' has shown to be predictive of dropout, poor learning outcomes, and suboptimal cognitive development (Finn & Zimmer, 2012; Ma et al., 2015; Noltemeyer et al., 2015; Upadyaya & Salmela-Aro, 2013). Yet, despite the inherent value of student engagement, there is still ongoing debate around the structure and measurement of the concept (for details see Eccles, 2016; Fredricks et al., 2016; Reeve, 2012).

Over the past decade, there has been a considerable effort towards refining the conceptualisation and measurement of 'student engagement'. A breadth of notable research has contributed toward our understanding of this complex measurement (e.g., Astin, 1984; Fredricks et al., 2004; Kahu, 2013; Kahu & Nelson, 2018). A

summation of this research output has been provided by Trowler & Trowler, (2010), and implications of which were discussed in a previous StudentSurvey.ie report (McCashin & Boyd, 2021). To summarise, the extant literature specifies the following key findings:

Figure 1.

Overview of existing student engagement findings



Student engagement is widely accepted as multi-dimensional construct encompassing three essential components: affective (emotional), cognitive and behavioural (Eccles, 2016; Payne, 2019). However, some researchers suggest a fourth component that encompasses the autonomy and social aspects of engagement (Reeve, 2012). It is also important to note the differentiation between 'engagement' and 'motivation' - engagement being the observable and measurable behavioural manifestation of 'motivation' (Appleton et al., 2008; Bond et al., 2020). A full multilevel framework of student engagement factors can be found in Kahu (2013).

Operationalising a definition - a compromise

Despite the effort towards refining a definition of student engagement, criticism regarding the depth of student engagement research, and how this impacts the rigor of research remains (Boekaerts, 2016; Kahn, 2014; Lawson & Lawson, 2013; Zepke, 2018). Thus, while it is acknowledged that no one study can measure every aspect of student engagement or satisfy every interpretation of the construct (Kahu, 2013; Solomonides, 2013), for the purpose of this report, student engagement will be defined as: students' involvement with activities and settings that are likely to generate high-quality learning outcomes; while also recognising the role of staff, the wider environment, and students own responsibility in the development of knowledge and participation (Radloff, 2011; McCashin & Boyd, 2021). This definition is in keeping with the StudentSurvey.ie underpinning concept and definition that was embedded in the founding NSSE surveys (Kuh 2003; McCormick, Kinzie, and Gonyea 2013; Coates et al. 2022)

Context: The Irish Survey of Student Engagement

First implemented in 2016, the Irish Survey of Student Engagement (StudentSurvey.ie) is an annual national survey of student engagement among students in twenty-five higher education institutions in Ireland. Drawing upon an extensive literature, the Irish student survey is based on established international best practice approaches and is designed to focus on student engagement. The

survey collects self-reported measures from first year undergraduate, final year undergraduate, and postgraduate students' perceptions of their experiences in higher education. Importantly, alongside the significant quantitative data collected through multiple choice questions, the survey asks the two key qualitative open-ended questions of:

1. What does your institution do to best engage students in learning?
2. What could your institution do to improve students' engagement in learning?

These two questions have produced a significant quantity of qualitative data encompassing valuable student feedback based on their own personal experiences over the years. Yet, to date, this resource is still largely under-examined, and there is a need for a more systematic and comprehensive understanding of the data based on a combination of quantitative and qualitative analysis.

The Present Study – how can we approach the data

Given the inherent complexity around the educational domains, the integration and interpretation of quantitative and qualitative methodologies within large-scale student research has proved challenging. A large proportion of programme evaluations and survey research takes the form of quantitative design, and such approaches are extremely valuable for large-scale student research (Steyn et al., 2019). However, while quantitative methods offer the practicality, speed, and advantage of statistical generalisation, qualitative methods can often be the tool needed for analysing the intricate narratives and contexts detailed by survey

respondents, adding layers of understanding that quantitative analysis can often inadvertently neglect (Davidson et al., 2019; Tenny et al., 2023). In the context of large-scale student research, qualitative methods have enriched our understanding of the "why" behind student behaviours and perspectives, giving clues into the motivations and emotions behind engagement (Mandouit, 2018; Shah & Pabel, 2019). Yet, like quantitative, qualitative methods face their own unique challenges. Qualitative methods are often extremely time consuming, resource intensive, and reliant on subjective interpretation.

However, recent advancements in computational methods have generated new opportunities for analysing text data on a large-scale (Yan et al., 2013). Indeed, researchers have identified a need for combining this text analysis with human interpretation for large-scale student research (Bazeley, 2006; Gläser-Zikuda et al., 2020). Thus, it is this combination that the current paper will utilise, approaching the large-scale student feedback data using quantitative methods and text analysis followed by an in-person qualitative research event.

Method

Dataset

Participants for this study included students enrolled in a Higher Education institution in the Republic of Ireland. A total of 275,302 students responded to the qualitative section of the study, 130,925 of which were suitable for analysis after filtering for incoherent responses. Table 1 presents the percentage of participants by various demographic characteristics. A total of 5 participants took part in the qualitative analysis.

Table 1.

Participant Demographics

Cohort	
First Year Undergraduate	46.54%
Final Year Undergraduate	34.56
Taught Postgraduate	18.9%
Institution Type	
Universities	47.97 %
Institutes Of Technology	44.29 %
Other Institutions	7.74%
Mode of Study	
Full-Time	87.97%
Part-time/Remote	12.03%
Programme Type	
Undergraduate Cert/Dip	6.84%
Undergraduate General Degree	11.08%
Undergraduate Honours Degree	64.74%
Graduate Cert/Dip	2.15
Master's Taught	15.17%
Field of Study	
Agriculture, forestry, fisheries and veterinary	1.64%
Arts and humanities	15.24%
Business, administration, and law	21.16%
Education	6.67%
Engineering, manufacturing, and construction	10.34%
Generic programmes and qualifications	0.17%
Health and welfare	15.00%
Information and Communication Technologies (ICTs)	8.46%
Natural sciences, mathematics, and statistics	10.38%
Services	4.58%
Social sciences, journalism, and information	6.35%
Gender	
Female	58.28%
Male	41.57%
Other	0.15%
Age Group	
23 years and under	63.07%
24 years and over	36.93%
Gender	
Female	58.28%
Male	41.57%
Other	0.15%
Country of Domicile	
Ireland (including Northern Ireland)	88.65%
Internationally Domiciled	11.35%

Materials

Two qualitative questions were included in the survey: 1) What does your institution do best to engage students in learning? 2) What could your institution do to improve students' engagement in learning?

Data Analysis

We applied a five-part data analysis approach. Firstly, we analysed and ranked the sentiment of each qualitative response. Secondly, we conducted a thematic analysis on the top 10% positive and negative responses. To approach the latent topics in the data from an alternative perspective, thirdly, we employed a biterm topic model to analyse the same top 10% sentiment responses. Fourthly, we identified hidden themes using a latent semantic analysis followed by a thematic analysis on the entire dataset. Lastly, we collected qualitative data based on the results of the previous four steps during a co-research workshop event.

Step 1: Sentiment Analysis

Responses to the two qualitative questions can be broadly classified as negative, neutral, or positive. This categorisation was achieved by analysing the words in each response and scoring the overall response on a numerical scale, which reflects the degree to which a response contains negative and positive emotion (for further details see Hutto & Gilbert, 2014). Additionally, we combined the *improve_how* and *best_aspects* qualitative responses into one database column and conducted the sentiment analysis on this variable. The results were then further divided into the top 10% positive and negative responses overall, as well as by year.

Step 2: Thematic Analysis

Following Braun & Clarke (2006), a thematic analysis was conducted on the top 10% negative and positive responses in the combined qualitive variable. Firstly, data were transferred to Microsoft Excel, and read and re-read to establish overall familiarity. Secondly, an initial coding of keywords and sentences was applied to the dataset. Thirdly, all codes were then organized within draft themes and sub-themes. Fourthly, a thorough review and revision of themes was implemented. The fifth step involved the visualisation of themes and subthemes using the software (*NVivo*) to facilitate the naming of themes and subthemes. Lastly, a full write-up of each theme and subthemes occurred, with continued reference to raw data to ensure richness and originality of the student voice was represented throughout.

Step 3: Biterm Topic Modelling (BTM)

BTM is a technique that extracts topics based on representing each document as a collection of word pairs (biterms) (Yan et al., 2013). This allows the capturing of cooccurrence patterns of words within each response that can help identify latent topics. This was completed on the top 10% of negative and positive responses for each year. The specific process is described as follows:

1. Stopwords and the Universal Dependency (UD) model for English were defined and imported.
2. Biterms were extracted and processed with an alpha = 5, beta = .01, and the number of topics set to 10.
3. The top 10 words for each topic were extracted and visualised using bar plots.

Each topic was assigned a name using the natural language processing tool ChatGPT. We then grouped these topics by commonality and coded them into themes using NVIVO.

Step 4: Latent Semantic Analysis (LSA)

LSA is a natural language processing technique that retrieves relationships between the responses in a corpus (Deerwester et al., 1990). In general, words with similar meanings appear in similar contexts. LSA utilises this idea and captures these contextual relationships and represents them as dimensions. An LSA was performed on the entire improve_how and best_aspects variable, with the dimension reduction

set to 3 dimensions. A second thematic analysis was then conducted on the responses for each dimension to interpret the dimension themes.

Step 5: Qualitative Analysis - a co-research event

We hosted an in-person co-research event to collect qualitative data on education stakeholders' opinions of the data analysis output. The purpose of this event was to gain further insights, validate or reject the analysis output, and identify any additional perspectives or themes.

Participants for this event consisted of two students and three members of DCU's School of Psychology (one PhD researcher, one Assistant Professor, and one Technician), which were divided into two groups.

Event Format

The co-research workshop was structured into three distinct tasks to facilitate comprehensive feedback and exploration:

- *Task 1: Understanding Context*
    a. Participants were first briefed on the background and rational of the study
    b. Each group was presented with 30 sentences, consisting of 10 random sentences from each LSA theme, and were asked to divide these sentences into 3 themes and name each theme

- *Task 2: Analysis Evaluation and Comparison*
    a. Participants were then presented and informed about our LSA themes and subthemes
    b. Participants were then asked to "compare and contrast our themes with yours – how would you interpret this?"

- *Task 3: Capturing the Student Voice*
    a. Participants were asked how "based on your experiences of this session, what is the best way of capturing the student voice within future StudentSurvey.ie research? Can you provide any examples?"

The event was structed such to allow for ample time for each group discussion. Each group recorded their thoughts using a pen and paper. The facilitators also listened to each response and took notes on any important points raised.

Results

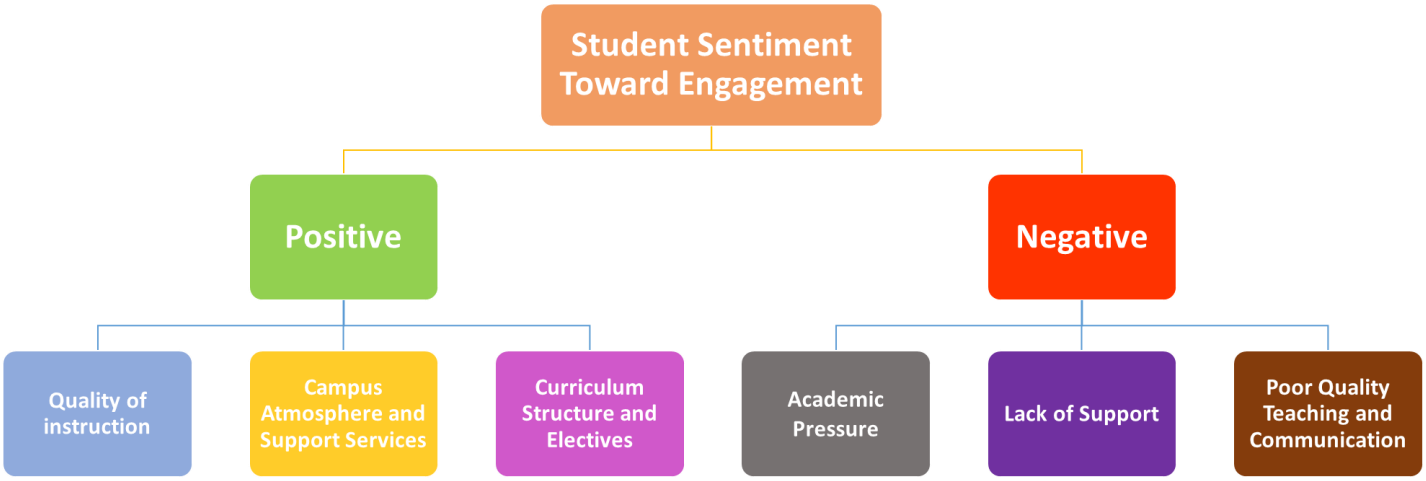
In alignment with our methodology, the results of this report will be presented in accordance with the sequential analysis stages. Initially, we will present the results of the combined sentiment and thematic analysis. This will be followed by the outcomes of the biterm topic modelling, highlighting its predominant topics. Subsequently, a comprehensive interpretation of the LSA themes will be provided. Lastly, the results of the qualitative co-research workshop event will be presented, including any refinements to our final LSA themes.

Thematic Analysis 1: Sentiment Extremes

Due to the responses being reduced to 20% of the overall dataset, interpretation was limited to surface themes. However, three key themes were interpreted from the top 10% positive and negative student responses. The positive themes included: *1) Quality of instruction; 2) Campus atmosphere and support services; and 3) Curriculum structure and electives.* While the negative theme included: *1) Academic pressure; 2) Lack of support; 3) Poor quality teaching and communication.* A visualisation of these themes can be seen in Figure 2.

Figure 2.

Map of predominant themes divided by sentiment.



Positive Themes

Theme 1. Quality of Instruction

This theme encompassed the quality of the lectures. It detailed students' praise for lecturers that connect with students, and who are willing to engage with students beyond the content of their courses. For example, one respondent commended how "*the staff are very approachable and make a point of letting you know they are there to help and guide you if you need it".*

Importantly, this theme also reflected students' preferences for lecture content that relates to real-life experience in the taught subject. For instance, another respondent praised staff that *"use a range of emerging tools and real-life examples relative to industry trends".*

Theme 2. Campus Atmosphere and Support services

This theme represented the quality of on-campus activities, alongside the overall welcoming and accepting atmosphere created by the institution. One student reported that the "*the standard of lecturer has a substantial influence on the institutions ability to engage with students and Maynooth has some of the finest professors that allow for this. I think they also allow for a relaxed atmosphere on campus and in lectures which leads to relaxed students who can focus on their studious endeavours."*

This theme also included the availability of support services such as career or psychological counselling, on-campus health services, gym facilities, and canteen

services. One response even highlighted a need for mandatory student support sessions saying, *"student support services are the best and very helpful, should have mandatory one on one sessions with each student at least once in a semester so that they can hear them. this one-on-one sessions makes students feel more confident to do their tasks and helps to share the feedback if any".*

Theme 3. Curriculum structure and electives

This theme detailed the structure of the curriculum, the arrangement of modules, and the availability of electives. The theme emphasised the importance of restructuring modules, students' praise for optional electives, and the importance of module order. For instance, one respondent highlighted the need to *"provide a wide variety of modules, as well as numerous electives/specialisms. this allows students to undertake the necessary modules for our chosen career, whilst also personalising our degrees to suit our own interests."*

This theme also encompassed the practical side of the curriculum, including labs, assignments, and work placement experience. Students praised for hands-on experience, good lab manuals, and one-on-one conversations with lecturers: "*all my academic lecturers provide a blended way of teaching comprising of both practical and standard learning, one does not only learn about their subject but also develop an array of skills and qualities one cannot get from books."*

Negative Themes

Theme 1. Academic Pressure

This theme provided insight into students' dissatisfaction with excessive workload, tight deadlines, and unrealistic expectations from their academic courses. For example, one student urged for the institution to *"create less pressure and be in tune with students and life they have outside of college."* While another highlighted the need for "*deadlines at the beginning of a term, working as a group, doing presentations increased engagement and clarity on different topics".*

Theme 2. Lack of Support

This theme embodied students' feelings of being unsupported by the institution and faculty members. One respondent mentioned how "*due to it being online. they allowed more students in, did not provide more teaching staff or resources, now our whole thesis has been pushed out 3-4 months. it's a pathetic joke. stop being so greedy, and actually provide student fulltime and part time with proper counselling support".*

Likewise, students also described a lack of peer support, with many referencing to COVID-19. For instance, one student recommended for their institution to "*provide ongoing support and availability if required post covid- encourage student interaction to develop strong peer support networks."*

Theme 3. Poor Quality Teaching and Communication

This theme detailed student reports of low-quality teaching, poorly organized classes, and irrelevant course content. One respondent said, "*my experience in current course is very poor. there is little student engagement and the course is very poorly organised.".*

On a similar note, many students called for better communication. One student noted how "*faculty aim to keep means of contact accessible and provide assistance. in general, of course some still have not met the standard. make a clear manner in which students can report lack of communication between themselves and lectures."*

Biterm Topic Modelling

Topics were extracted for each year. This created 10 topics per year, each including the 10 most relevant words relating to that topic. An example output for 2017 can be seen in Figure 3. These topics were subsequently named by AI which considered the weighting of each word in every topic (see Table 2).

Figure 3.

Topics generated based on biterms in the 2017 sentiment responses.

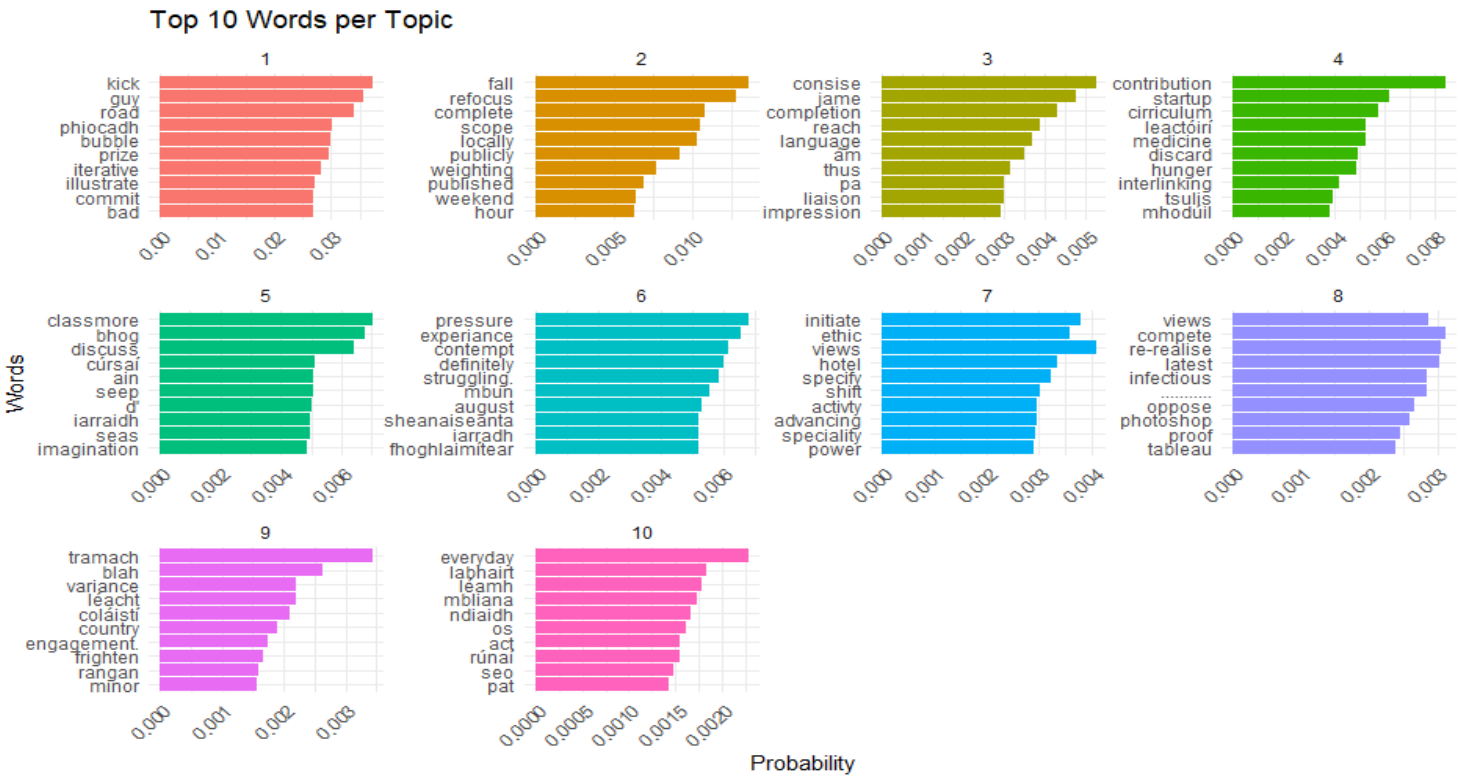


Table 2.

2017 AI generated topic names

Topic	Topic Names
1.	Action-oriented
2.	Time and Progression
3.	Communication
4.	Education and Learning
5.	Language and Learning:
6.	Emotions
7.	Ethics and Values:
8.	Technology
9.	Environment
10.	Business and Finance

Topic Coding

Upon coding the biterm topic names by frequency, the following three themes and subthemes were generated:

1. Technology and Innovation:

- Advancements and integration of technology
- Accessibility and availability - impact of technology on learning outcomes
- Electronic communication

2. Productivity and Efficiency:

- Effective communication to students
- Teaching students to prioritize and manage time
- Disengagement prevention

3. Personal Development and Empowerment:

- Career development and employability
- Building resilience and coping skills
- Emotional intelligence and communication skills
- Recognition of achievements

Theme 1. Technology and Innovation

Five out of the seven years generated one or more topic names with an explicit mention of “technology” (2016, 2017, 2018, 2020, 2022). While 2019 did not generate any topic names with a link to technology, 2021 did include the topic names of “Tools and Equipment” and “Machinery and Equipment”. Relating topics, classified into subthemes, included the use of “advanced tools and machinery”, their “accessibility and availability”, alongside the use of “electronic communication”.

Theme 2. Productivity and Efficiency

While only two years generated topic names with an explicit mention of “productivity” and “efficiency” (2016, 2019), four years contained related topic names. For example, 2017 included the topic of “time and progression”, and 2020 included the topic “disengagement: prevent”. Moreover, a relating topic that emerged across years was a emphasis on communication and “conveying knowledge”.

Theme 3. Personal Development and Empowerment

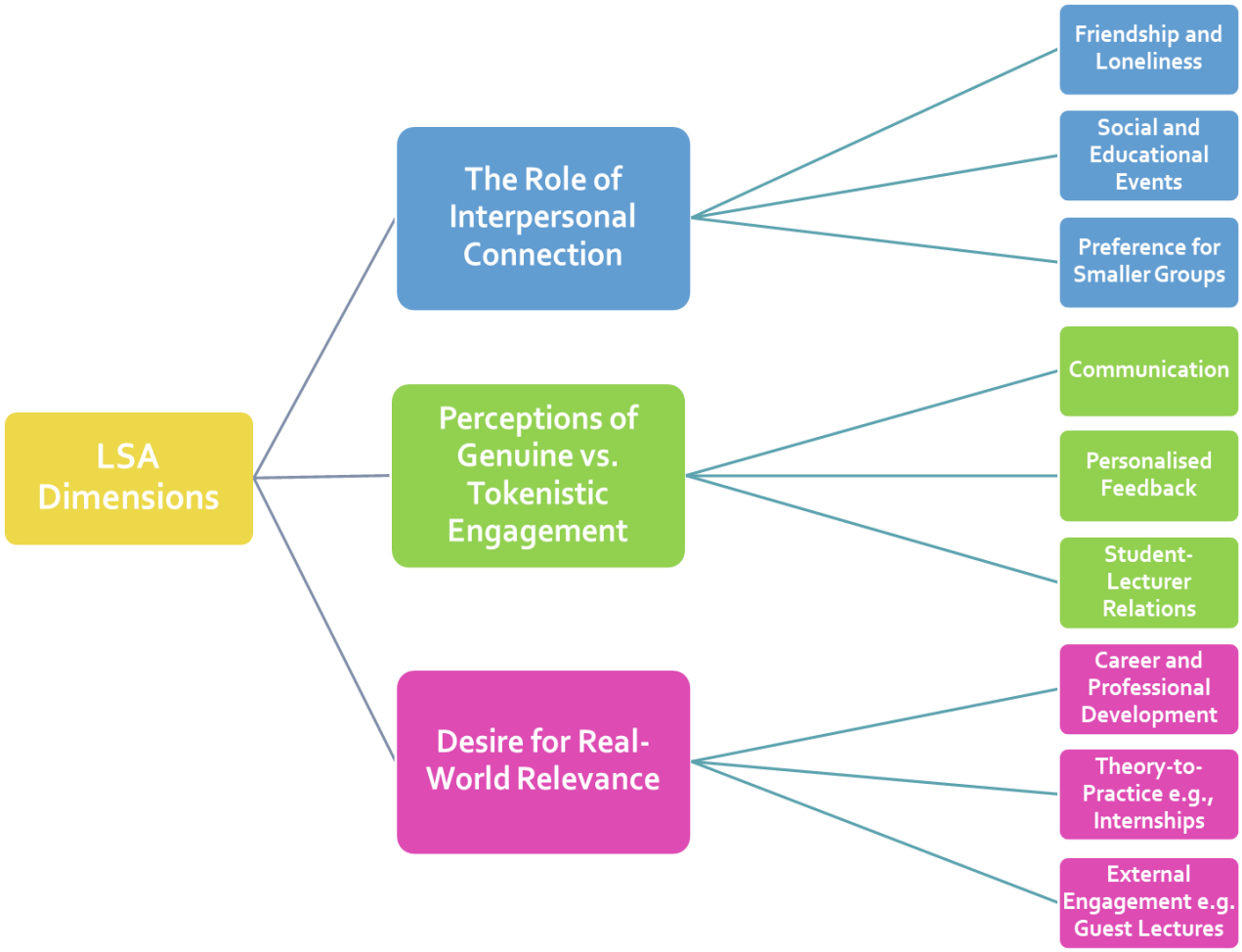
Three years generated topic names using the words “empowerment or development” (2016, 2020, 2022), however, every year bar 2018 had topic names falling under this category. For instance, 2017 included the topics “emotions” and “ethics and values”, which are key aspects of personal development. Likewise, 2016 had the highly relevant topic of “education and growth”.

Latent Semantic Analysis

Assigning three dimensions to the combined improve_how and best_aspects variable resulted in the themes of: 1) *the role of interpersonal connection; 2) perceptions of genuine vs. tokenistic engagement; and 3) desire for real-world relevance.* Each of these themes contains three subthemes as presented in Figure 4.

Figure 4.

Latent semantic analysis dimensions – preliminary findings



Theme 1. The Role of Interpersonal Connection

This global theme contained three subthemes: *friendship and loneliness; social and educational events; and preference for smaller groups*. Overall, this theme represented students' urge for a more inclusive learning environment that fosters interpersonal relationships. There were numerous references to reduced engagement as a result of loneliness. Likewise, a large number of student expressed desires for more social activities outside of lectures and for smaller groups during lectures. Both requests have evident links to interpersonal interaction and the development of friendships.

Subtheme 1: Friendship and Loneliness

Students highlighted the importance of forming friendships and voiced the prevalence of loneliness among students. One respondent detailed how "we don't know our classmates - people are feeling very lonely", and another reported how "too many people assume everything is okay. a lot of students are lonely". This subtheme reflected the isolation and disconnection many students feel during their studies. Moreover, students appeared to highly value friendships as they are among the "best ways to improve mental and emotional health and work ethic".

Subtheme 2: Social and Educational Events

Furthermore, many students urged for activities that would promote social interaction and engagement. The desire for more social and educational events such as sports events, day trips, cultural festivals, clubs, and student-led initiatives was evident. In advocating for institutional intervention to enhance student engagement, students called for institutions to "get students more involved with campus life in general through social events". This appeared to stem from the perception that "people do not make friends as easily because of the remote learning which means a lot don't have support from peers".

Likewise, many students asked for "extracurricular educational events" which would provide an opportunity to connect with "students with similar interests". One student suggested that institutions "could help students who feel isolated/lonely/have no friends by making study groups with people they think would work well together". These events would not only offer opportunities for friendships but also contribute to students' personal and professional growth.

Subtheme 3: Preference for Smaller Groups

Another key activity allowing for interpersonal connections within lectures is group work. However, despite the prevalence of group work in curriculum today, many students still felt left out during class activities. Students reported a clear preference for "small group tutorials". This may be for a variety of reasons however, the data indicated that many "students may be nervous to speak out" in these larger groups.

Further, students reported that small lectures “really help us to ask and understand materials that we might not understand or ask questions on in big lecture halls”. Students felt that these smaller groups make it “easier to engage in learning and makes students more comfortable”.

Theme 2. Perceptions of Genuine vs Tokenistic Engagement

This global theme encompassed specific aspects of engagement that impact students’ perceptions of whether they are genuinely cared for, supported, or engaged by their institution. Many students detailed a feeling of insincerity and tokenistic engagement from their institution in three forms, including: *communication, personalised feedback, and their relationships with lecturers.*

Subtheme 1: Communication

This subtheme reflected student desires for communication that reflects authentic engagement. Many students perceived themselves as not knowing “what we need to know” or being “lost in what we are meant to be doing”. Many respondents described the majority of emails as “spam” or “unclear” instead meaningful information. One respondent even detailed that: “the first key of engagement for students is clarity. students are advised well in advance about readings, lectures, notes, assignments. Etc. when mature students are trying to balance work and study knowing what is expected months in advance is very useful for life balance. continue to employee staff that genuinely care about education and the welfare of students”.

Subtheme 2: Personalised Feedback

Likewise, many students felt the feedback they received was inadequate and "generic". This subtheme reflected student desires for "more in-depth feedback…instead of just a vague comment". Many responses referenced a need for more "personal feedback" which may help them feel less isolated and genuinely cared for. One response stated that they wanted lecturers to "provide an ongoing interest in your work and give feedback, clear communication, and written feedback at times other than assessments". Students used terms such as "individual feedback", "detail", "constructive", and "guidance", suggesting that many students do want to improve their work output but perceived themselves as lacking the genuine support. Indeed, one student said, "providing feedback would also be helpful to know how we are doing and what needs to be improved".

Furthermore, the data illustrated that students not only value personal feedback for their grades, but also for moral support. Within this subtheme, a large number of responses referenced "encouragement" when discussing feedback. This may reflect a specific aspect of feedback that conveys sincerity and genuine concern. Additionally, it could be closely interlinked with the major theme of "the role of interpersonal connection" and addressing student loneliness. When asked what could their institution do to best engage students in learning, one respondent concisely said: "by giving regular feedback and encouragement".

Subtheme 3: Student-Lecturer Relations

The data indicated a strong preference in students for lecturers who are "approachable", "understanding", and "receptive" to their personal and academic needs. There were major references to a desire for lecturers to take the time to know their students as individuals and show genuine interest in their progress. Students praised lecturers that "care a lot about us and how we do" and seem "genuinely interested in our academic welfare". However, the data also illustrated a common student perception - that this authentic student-lecturer interaction is notably lacking or in some cases non-existent. For example, some responses reported the following concerns: "lecturers talk to us like were children". Continuously, [lecturers] "need to care more about students instead of just throwing lectures at us". These responses indicate a clear negative perception of tokenistic lecturer engagement.

Moreover, building genuine student-lecturer relationships involves encouraging open communication and providing opportunities for one-to-one discussions outside of class time. Yet, the data indicated that many students felt that this platform is inaccessible and they are unable to voice their challenges and aspirations. For example, one respondent wanted more "accessible channels to communicate with lecturers to ask questions", while another suggested that "maybe the university could have more 1 to 1s planned between students and an academic supervisor to track the student's engagement in learning".

Theme 3. Desire for Real World Relevance

This global theme concerned students' desires for a programme that is closely aligned with real-world applicability and relevance. Within this theme, three subthemes were generated: *career and professional development; theory-to-practice; and external engagement.*

Subtheme 1: Career and Professional Development

This subtheme encapsulated student desires for course content and opportunities that would serve to advance their professional development and career skills. The data strongly praised institutions that prioritized developing these skills in students and preparing them for the job market. Indeed, one respondent suggested to: "place more emphasis on improving professional skills for your career" while another suggested implementing "professional skills modules".

Subtheme 2: Theory-to-Practice

Another key element to real-world relevance was the seamless transition from theoretical learning to practical application. Students appeared to value curriculum that allows them to apply their knowledge in real-life scenarios. Respondents used terms such as "relevant topics", "real world", "different perspectives", and "applied" when discussing curriculum. Specifically, one student advocated to "link theory with regular work placement" while another said to "apply real life situations to theory so we better understand the uses of theories".

Subtheme 3: External Engagement

Continuing along the lines of professional development, the data illustrated high value in activities outside the lecture environment that further the real-world relevance of their degree. The data contained repeated reference to collaboration with external partners such as “guest lectures”, “internships”, “career guidance”, and “workplace events”. It is clear that students found it helpful when institutions prepare them for real world-scenarios, as summarised by one respondent who detailed how this aspect is lacking by saying: “additional extra guest lectures/speakers and tutorials for a more well-rounded experience”.

Qualitative Co-research Event – findings

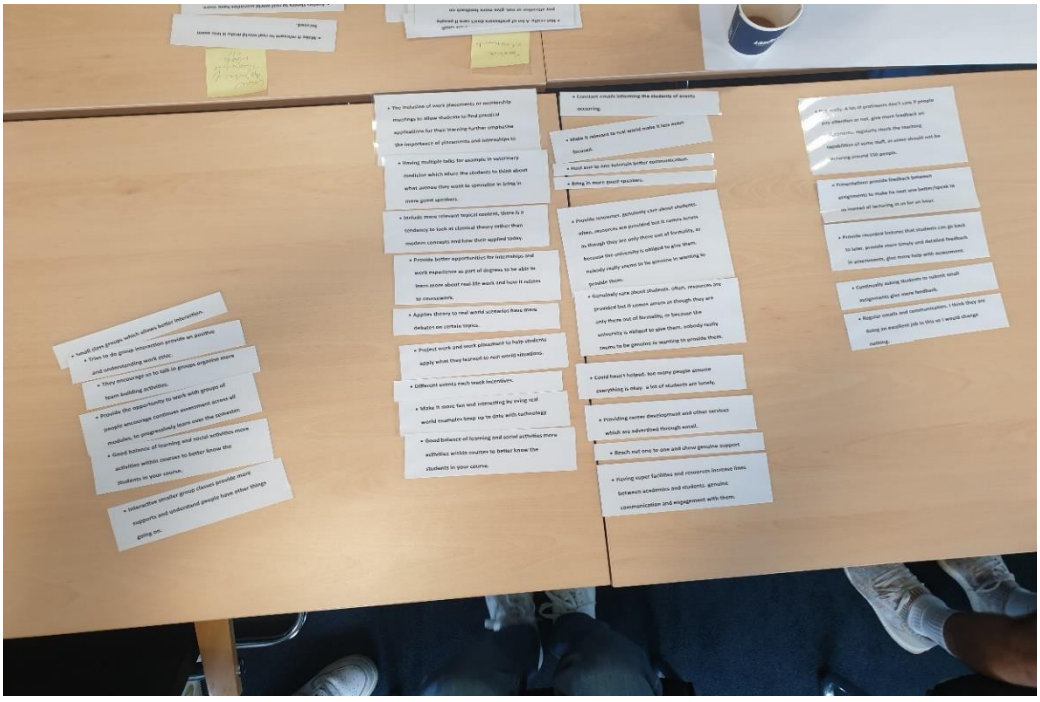
Task 1:

After being presented with 30 sentences, containing ten random sentences from each LSA theme, the group of two students interpreted four overarching themes including:

1. Acts of Empathy and Genuine Care
2. Resources
3. Feedback and Communication
4. Groups

Figure 5.

Student-Interpreted themes.



On the other hand, the group of DCU School of Psychology members interpreted three themes with numerous subthemes. This group did not provide a distinct name for each theme, however, the subthemes were divided as follows:

Theme 1:

- Identity in third level education
- Belonging
- Time Management
- Responsibility
- Interpersonal
- Active Empathy
- Transparency

Theme 2

- Incentive
- Seeing the outcome
- Focus groups
- Engaging those who are disengaged

Theme 3

- Theory-to-practice
- Feedback and Communication
- Resources
- Support of peers

Task 2: Analysis Evaluation and Comparison

One of the key active discussions during the event was within the task of comparing and contrasting our provisional themes with the participants' named themes.

Regarding the first overarching theme, *the role of interpersonal connection,* each group agreed that the theme encompassed their own analysis. Moreover, the group expanded on this domain and discussed topics such as the still largely unknown aftermath of COVID-19, and the reflections of society within educational institutions. The group also contemplated the feasibility of smaller groups, particularly in large courses. The group noted how many of these large courses have vast amounts of necessary theory that simply needs to be communicated, and that this curriculum does not lend itself to group work. Nevertheless, the agreement with the subthemes appeared unanimous and thus, this overarching theme remains unchanged.

The second overarching theme, *perceptions of genuine vs. tokenistic engagement,* received an equal level of consensus. While all agreed that communication, personalised feedback, and student-lecturer relations are important factors in promoting perceptions of genuine engagement, there was a very interesting discussion around the appropriate level of transparency in communication. Specifically, there appeared to be mixed opinions around whether students would prefer completely transparent communication around their course (e.g., telling a student that "this semester will be challenging and involve new statistics that many will struggle with"). The group did not reach a conclusion on this point but it is worth mentioning as scope for future investigations, particularly with respect to career planning, and likewise, the role of a student's broader social life, identity, and extracurricular involvement on their engagement.

A disagreement with our interpretation on the second overarching theme was that the subtheme *communication* could also encompass the subtheme *personalised feedback.* Consequently, after further review, we decided to merge the two subthemes into a single subtheme labelled *Communication and Personalised Feedback* (See Figure 7 for updated thematic map).

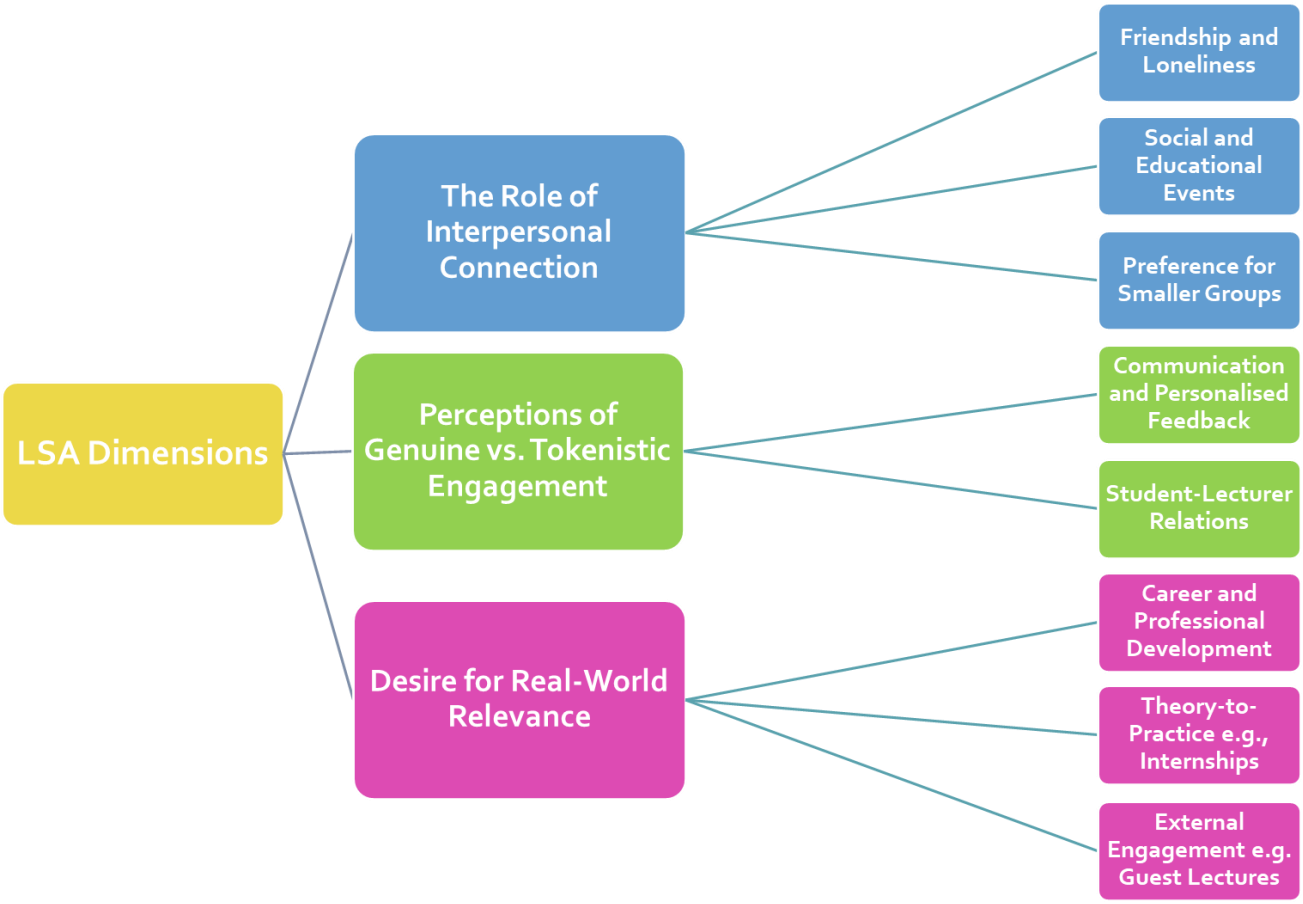
The final overarching subtheme, *desire for real-world relevance*, also received confirmatory positive feedback. The students in the workshop related to the desire for curriculum to be more explicitly linked to real-world scenarios. In a similar vein, the faculty group recognised the values in external engagement practices such as guest lectures, career events, and industry interaction. Moreover, there was valuable discussion regarding the degree to which students want to be treated more like adults in real-world jobs. While some agreed that this independence is essential for students' personal growth and performance, others felt that this greater independence would be too detrimental to the less motivated students, especially where there may be a lack of clarity about career pathways. Despite this debate, the consensus regarding our interpretation led to this overarching theme remaining unchanged.

Figure 6.

Co-research event participants during the data analysis phase

Figure 7.

Updated Latent Semantic Analysis Dimensions



Task 3: Capturing the Student Voice

Participants were asked how "based on your experiences of this session, what is the best way of capturing the student voice within future StudentSurvey.ie research? Can you provide any examples?"

The following points were suggested:

- Have questions that students can expand upon if they wish e.g., ask about how to best improve student engagement then have a follow up question asking them to "expand on that please"
- Greater incentives to fill out the surveys – much is often asked of students during the semester, so genuinely creative and incentivisation structures are therefore advisable
- Detail how their responses can create change within educational institutions – students often struggle to recognise how their input could shape policy, so a more effective means of communicating how their responses can influence policies should be considered

Discussion

This report applied a comprehensive five-step approach to analyse the open-ended qualitative questions within the StudentSurvey.ie dataset.

Step 1: Sentiment and Thematic analysis

The first and second step involved a sentiment analysis followed by a thematic analysis on the top 10% positive and negative responses. The results of this were three positive and three negative global themes interpreted from the data. The positive themes included: *1) quality of instruction; 2) campus atmosphere and support services; and 3) curriculum structure and electives.* The negative themes included: *1) academic pressure; 2) lack of support; and 3) poor quality teaching and communication.* These themes, presented in Figure 2, provide a concise overview of the most extreme positive and negative areas hindering or promoting students' engagement.

Step 2: Biterm Topic Modelling

To approach the sentiment topics from an alternative perspective, a biterm topic model was applied on the combined positive and negative responses. In sum, three overarching themes emerged from the biterm topics when grouped by prevalence including: *1) technology and innovation; 2) productivity and efficiency; 3) personal development and empowerment.*

Overlap?

The combination of sentiment and thematic analysis, alongside the biterm topic modelling, provided a nuanced and well-rounded view of student feedback. While the sentiment and thematic analysis provided a surface overview of the positive and negative themes influencing an engaging learning environment, the biterm topic model served to both reinforce these topics and reveal new themes.

For instance, one could envision the theme of "technology and innovation" from the biterm topic model intersecting with the theme of "quality of instruction" from the first thematic analysis. Technology and innovation teaching methods can enhance overall quality of instruction. For example, incorporating contemporary digital tools, online resources, or immersive learning experiences can make lectures more engaging and accessible to students. Indeed, embracing technology can also enable instructors to provide timely feedback which has previously shown to contribute to a more engaging learning environment (LaBelle & Johnson, 2020).

Furthermore, one's "personal development and empowerment" could have major connection to the "campus atmosphere and support services". Support services such as counselling, mentoring programmes, guest speakers, and leadership workshops can all contribute toward students' personal development. Moreover, a campus atmosphere that promotes extracurricular activities that foster self-confidence and empowerment among students would benefit students both personally and academically.

Additionally, ones "productivity and efficiency" may greatly intersect with the "curriculum and electives" available. When students have the flexibility to tailor their

electives according with their interests and aspirations, they may be more likely to be motivated and engaged.

So what does all this mean?

Incorporating both analysis and identifying these potential connections has giving a valuable degree of confirmation to the relevance of the identified themes. The themes that emerged from the sentiment thematic analysis and biterm topic analysis reinforce and compliment each other, offering a more comprehensive understanding of the positive and negative themes influencing student engagement. Moreover, these findings acted as a further confirmatory tool when reviewing the results during the latent sentiment analysis.

Step 3 and 4: Latent Sentiment analysis and Thematic Analysis

A latent sentiment analysis was applied to the entire dataset. This analysis uncovered 3 dimensions within the qualitative survey questions. These dimensions were analysed using a thematic analysis which led to the interpretation of three themes including: *1) the role of interpersonal connection; 2) perceptions of genuine vs tokenistic engagement; and 3) desire for real-world-relevance.* The first theme contained three important subthemes: *friendship and loneliness; social and educational events; and preference for smaller groups.* Similarly, the second theme had three subthemes: *communication; personalised feedback; and student-lecturer relations.* Lastly, the third theme also contained three subthemes including: *career*

and professional development; theory-to-practice; and external engagement. In sum, these three themes and subthemes, as illustrated in Figure 4, give excellent insight into the factors students perceive as hindering or promoting their engagement, and provide further consolidation of, and context to, findings across the suite of qualitative reports on the StudentSurvey.ie datasets (see https://studentsurvey.ie/index.php/blog/qualitative-data-analysis-results-methods for further information).

Theme 1: The Role of Interpersonal Connection

The findings that students highly value friendships and interpersonal connection is well established (Buote et al., 2007). Previous StudentSurvey.ie reports have placed some emphasis on the role of peer support in student engagement (McCashin & Boyd 2021). However, it is possible that the prevalence of loneliness among students in Irish educational institutions is largely underreported or inaccurately conceptualised. It is very interesting to note the value students placed on friendships and simple interactions with their peers. This value is present throughout the dataset and is indicative of the key debates within the literature which place emphasis on the agentic and social component of student engagement (Reeve et al., 2012). This also further aligns with the existing literature that emphasises the positive correlation between social support, mental-health, and academic achievement (Mishra, 2020).

Moreover, the urge for activities that promote this interpersonal connection outside of lectures was reflected in the subtheme *social and educational events.* This subtheme highlighted the lack of opportunities students felt in relation to integrating

with their peers. These opportunities are pivotal and foster an inclusive and engaging learning environment, which further contributes to student satisfaction and engagement (Bell, 2022). In the context of prior StudentSurvey.ie quantitative reports (2016-2022) on the question of feeling a part of a community, there are some interesting patterns of comparison. For example, the 2016-2022 trends from StudentSurvey.ie revealed that approximately 50% of respondents believed that their institution provided them with opportunities to be involved socially. However, it is not known from this data if the higher education institution was (in)directly facilitating, promoting or encouraging this. Importantly, other quantitative trends indicated that approximately 35% of students (2016-2020) believed their institution encouraged them to attend events that address important social, economic, or political issues, and only slightly more believed their institution encouraged contact among students from different backgrounds. When taking the totality of both the qualitative data and the patterns within the quantitative trends from StudentSurvey.ie, institutions are not playing a sufficiently direct role in cultivating student involvement in broader social, educational and civic events.

Similarly, the subtheme *preference for smaller groups* suggested that students also perceived themselves as lacking the opportunity to develop interpersonal connections within lectures. The data clearly communicated that students feel more comfortable and engaged in a setting that allows for interactions with peers. However, the current subtheme also showed that the group work many students experience within lectures involves too many people to create this comfort. Students may feel more comfortable in small group work as it fosters a sense of greater psychological safety, academic support, and encourages active participation. This is

also supported by existing literature on collaborative learning, which highlights the benefits of small group interactions for promoting critical thinking and engagement in course material (Chen et al., 2018; van Leeuwen & Janssen, 2019), and likewise corroborates the salient trends within the broader StudentSurvey.ie quantitative trends and the international literature (Coates et al., 2022).

Theme 2: Perceptions of Genuine vs Tokenistic Engagement

While previous reports have identified "support", "communication", and "feedback" as a critical aspects of student engagement, the nature and perception of these aspects has received less attention. Theme 2, *perceptions of genuine vs tokenistic engagement,* highlighted the significance of understanding how students interpret and experience the support and resources provided by their institution to promote engagement. This theme went beyond the identification of engagement support, and instead delved into students perception of the quality and authenticity of this support.

The subthemes of this global theme reveal that genuine engagement take various forms, for example, whether students perceive communication, feedback, and their relationships with lecturers as genuine.

The data suggested that effective communication plays a pivotal role in fostering genuine engagement with students. When students perceived communication as clear, timely, and meaningful, they were more likely to feel valued and supported by their institution. On the other hand, generic, untimely, and unclear communication lead to a sense of disconnection and detachment from their chosen course. Thus, it is

imperative that students receive personalised feedback that acknowledges students' personal strengths and areas of improvement and does so in a manner that feels genuine. Of course, this also proves challenging on the limited time and other stressors faced by staff – however, simple changes can be impactful. For example, utilising voice-based feedback on student learning platforms to deliver feedback is more time-efficient than detailed text-based feedback and could be received as more personable and engaging. This finding on personalised feedback also lends strong support to the results provided by colleagues from Insight Statistical Consulting in a prior StudentSurvey.ie report (Erskine & Harmon, 2021), who also concluded that feedback was a high priority response from students.

Likewise, student-lecturer relationships can play a key role in shaping students' perception of institutional support and engagement. Approachable, understanding, and genuinely interested lecturers appear essential in creating an environment where students feel valued and invested in. Conversely, when student-lecturer interactions are perceived as impersonal or meaningless, students may be more likely to become disengaged and alienated (Hagenauer & Volet, 2014).

Theme 3: Desire for Real-World-Relevance

This theme encapsulated student aspirations for curriculum and activities that align with real-world applicability and relevance. Students clearly voiced an appetite for course theory and content that they could directly utilise into the future. This data may suggest a sense of frustration with the current education system, as many students identify the countless hours they have already spent learning subjects during education that they may never use. Many students appeared to feel that their course is lacking this relevance. Although a majority of students go to third level to ultimately gain employment in their field of interest, many feel their curriculum is ambiguous in terms of application.

Students valued course content that allowed them to apply their knowledge in real-life situations, providing an even further level of understanding of the concepts they learned. Students urged for opportunities to develop their employability and professional skills as they recognise the competitiveness of the current job market. Students also suggested incorporating more career-orientated training and professional skills modules in the curriculum, and by addressing these issues, educational institutions can better prepare them for the workforce. This finding echoes the very recent skill gaps that have been documented where between a quarter and a third of organisations globally are concerned about their ability to effectively address skills gaps (ManpowerGroup, 2023: McKinsey & Company, 2020; PwC, 2021).

Similarly, outside of the lecture room, students urged for more external engagement opportunities for real-world-relevance. There were many requests for more

internship placements, guest speakers, career guidance lectures, and workplace events, which all provide valuable exposure to industry.

Concluding remarks

This report synthesised a rich overall dataset using a blend of both automated and traditional methodologies. The overall findings provide further insight into the Irish experience of student engagement, and the weight of the evidence underpinning our final thematic map should prove useful for the following key areas:

- *Future survey design*: critically reconsidering the questions designed to elicit qualitative data will greatly enhance our ability to understand the precise variables implicated in student engagement
- *Investing in mixed methodological approaches*: though time intensive and less efficient than survey methods, the use of traditional in-person qualitative techniques can still play an integral role in complementing the overall mission of StudentSurvey.ie and NSSE
- *(Re)conceptualisation of student engagement:* it remains unclear as to how different disciplines should approach, measure and appraise the connection between student engagement (as is currently operationalised in the NSSE surveys) and the more holistic factors within the higher education ecosystem – future research should aim to provide further granularity on the role of overlapping concepts when qualitatively examining the student experience and engagement.

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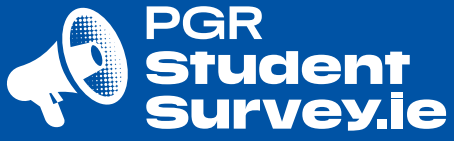
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