### Mapping Existing Research Output Focused on Higher Education Teaching and Learning in Ireland 1990-2015

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MAPPING EXISTING RESEARCH OUTPUT FOCUSED ON HIGHER EDUCATION TEACHING AND LEARNING IN IRELAND 1990-2015

Focused Research Report No. 5 2015

Scholarship in Teaching and Learning funded by the National Forum:

*Strengthening Ireland’s evidence base for teaching and learning enhancement in higher education*
Mapping Existing Research Output focused on Higher Education Teaching and Learning in Ireland 1990-2015

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PREFACE TO NATIONAL FORUM FOCUSED RESEARCH PROJECTS

The National Forum for the Enhancement of Teaching & Learning in Higher Education is a key consultative forum and an evidence-based change agent for teaching and learning enhancement and innovation for impact. It works in partnership with students, teachers, experts, learner support providers and researchers - and with institutional and system level leadership throughout the sector to provide thought leadership on developing future-orientated aspects of teaching and learning on Ireland’s emerging higher education landscape.

As part of Forum’s commitment to leading and facilitating enhancement from an evidence-based standpoint, it has funded a series of Focused Research Projects to be conducted over a six month period by higher education researchers in partnership with the National Forum. These projects were designed to facilitate rapid and focused research on specified themes to inform academic practice and guide enhancement activities, including:

- Transitions to higher education
- Student completion and retention in higher education (qualitative studies)
- Open Education Resources and Open Access
- Recognition of Prior Learning
- Research on Higher Education Teaching & Learning in Ireland

Successful projects were awarded funding by the Forum following competitive selection, based on international peer review and were initiated in December 2014. They ranged in scope from national analysis of existing practices and policies to in-depth case-studies located in small clusters of institutions. Ethics approval for the projects was granted through the higher education institutions involved and the National Forum’s Research Ethics Committee.
Collectively the projects have now created a baseline understanding in a national context on these topics, as well as a springboard for future enhancement activities and further practice/policy developments. Importantly, the successful completion of these projects attests to the collaborative partnership and engagement between the Forum and higher education institutions in developing a shared common purpose for evidence-based enhancement activities. In addition they also demonstrate the potential for contributing to the research and scholarship of Irish teaching and learning locally and internationally through peer-reviewed publications. The Forum in line with its scholarship strategy will support project teams to achieve this objective.

**Mapping Existing Research Output focused on Higher Education Teaching and Learning in Ireland 1990-2015**

This project, a national analysis, undertook a systematic survey of teaching and learning research in Irish higher education and marks the first study of its kind nationally. Using a recognised analytical framework (Tight, 2012) it analysed the key features and themes of teaching and learning research in Ireland. In doing so it provides an excellent panoptic view of the current contours of Irish teaching and learning research field, including key areas of inquiry and key contributing disciplines and institutions. This offers enormous potential to identify areas of teaching and learning which may be under-researched in the Irish context, and it provides direction towards those areas of research which could offer rich insights on matters of learning impact and the potential to inform practice.

An important product of this survey is the generation of a comprehensive bibliography of Irish teaching and learning research publications (2275 entries) drawn from structured online searches complemented by targeted searches. As a research resource it provides valuable starting point for future researchers in the field, and a resource to be augmented into the future. The bibliography is available in static format currently and further work will be undertaken to create a searchable online resource accessible across the higher education sector.
Thanks is due for the commitment and energy invested by the Project Team led by Dr Sara O Sullivan (UCD) with Dr Amanda Gibney, Dr Suzanne Guerin, Dr Michael Staunton and Dr Manolis Kalaitzake. The National Forum looks forward greatly to its ongoing partnership with the Project Team in sharing the outcomes of this projects for the benefit of the wider higher education sector during the next academic cycle and beyond.

For further information on all of the National Forum Focused Research Projects please see: http://www.teachingandlearning.ie/t-l-scholarship/national-forum-research-projects/.
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Executive Summary

Aims:
The purpose of this six-month ‘snapshot’ project was to map the extent and characteristics of research on teaching and learning in the Irish higher education field. This is the first such study focused on Ireland, and the first systematic study of teaching and learning research at a national level. The project set out to capture the nature and key characteristics of such research in Ireland between 1990 and early 2015, including the main fields of interest the types of publication and historical development. The two main benefits of such a study are that it provides; i) an evidence base for the enhancement and development of teaching and learning at a time of major change in Irish higher education; ii) direction for further research, and coordination of research.

Methodology:
The first phase of the study involved a systematic review of published research, comprising a wide range of sources, and involving electronic and hand searches. This was followed by a review of conference papers (Phase 2) and of research by identified experts (Phase 3), resulting in the identification of a total of 2275 records. The first stage of analysis in the study consisted of a review of abstracts for key themes. The thematic approach followed that of Malcolm Tight’s (2012) analysis of higher education research in the English language outside US and Canada. In the second stage, full papers will be sourced for full text analysis.

Main Findings:
This report focuses on the findings from stage 1 of the analysis.

- The study found a steady increase in the volume of relevant publications from 1998, and a marked increase from 2008.
- The most common type of publication is the journal article, but the search also identified conference papers and proceedings, which should provide a good measure of emerging research.
- UL is the most prolific institution in terms of number of records identified, closely followed by DIT and UCD.
- More than one quarter of publications focus on STEM disciplines, though a large proportion of records are non-discipline specific based on analysis of the abstracts.
• Around one third of all publications examined aspects of technology enhanced learning.
• The most prominent research theme was course design, followed by teaching and learning, and quality, while student experience contributed the fewest publications.

**Recommendations:**
• This research should be used to showcase more prominently the significant achievements in research on teaching and learning in Ireland.
• The further development of sustained research and publication in the field demands continued support and funding.
• Researchers ought to take note of concentrations and gaps in current research revealed here in order to take a more strategic approach.
• The impact of such research may be increased by the promotion of open access publication by institutions, and more strategic use of keywords and abstract content by individual researchers.
• Further work should be done to audit the translation of such research into teaching practice in Irish higher education.

**Next Steps:**
• Coding remains to be done for methods and methodologies, engagement with theory, and level of research focus.
• A more usable and searchable digital resource is planned based on the 121-page bibliography resulting from this study.
• This research has prompted many unanswered questions which demand a critical evaluation of the corpus, but this work is dependent on further funding.
Introduction

This six-month ‘snapshot’ project outlines the extent and characteristics of research on teaching and learning in the Irish higher education field. The project is the first systematic study of research focused on teaching and learning at a national level and brings together a considerable corpus of Irish teaching and learning research. It takes a wide lens, or ‘big tent’ approach (Huber and Hutchings, 2005), including research made public via publication in peer-reviewed and other journals, working papers, reports, theses and presentations at conferences and other fora. The focus is on existing research output focused on teaching and learning in Irish higher education, defined as Level 7 and higher on the National Framework of Qualifications.

Although research in the field of higher education has made much progress in recent decades, its dissemination and uptake, and consequent impact on teaching practice and student learning, have been more limited (Hughes and Mighty, 2010). This project will have an important impact in establishing in a scholarly way the current state of higher education teaching and learning research in Ireland, tracing aspects of its development, and investigating its strengths and limitations. In a time of major change in Irish higher education, the findings will provide an important evidence base for teachers, policy makers, the National Forum and others seeking to enhance and develop teaching and learning in Irish higher education. It will also feed into the broader efforts to coordinate research and policy in education across the E (e.g. RE C OM - R seau Europ en de iss minat ion en du cation COMpar e). Finally, by using a systematic approach to the study of higher educational research at a national level, it will make an innovative contribution to the field of researching higher education.

The research project was conducted at UCD, led by Dr Sara O’Sullivan with a Steering Group of five researchers and a wider thirteen-person Project Group, with a strong track record in both research and teaching and learning endeavours. The interdisciplinary research team membership is listed in Appendix 1.
Chapter 1 Literature Review

Background and Context: The Changing Irish Higher Education Environment

This study is set against the backdrop of a changing landscape in Irish higher education. While in 1989 there were 64,137 higher education students in Ireland, by 2012 the number had risen by more than one hundred thousand to 164,860 (Department of Education and Skills, 2014). This expansion is expected to continue, with a quarter of a million students forecast by 2020 (HEA 2013 cited in Hazelkorn, 2013, p. 4). A second major change is in the funding of Irish higher education. The 2008 global financial crisis saw a major reduction in higher education funding of approximately 25 percent (Hazelkorn, 2013, p. 4). Alongside this the sector has seen major decreases in staffing. The period has seen a reduction of 10 percent in academic staff, 12 percent in the universities (HEA, 2014 p. 41). One of the starkest consequences has been an increase in staff-student ratios from 1:15 in 2007 to 1:19 in 2014, compared to an OECD norm of 1:16 (Humphreys, 2014).

Clancy argues that a concern about pedagogy and teaching quality in Irish higher education has been evident since the late 1960s, albeit that it was not until the mid-1990s that systemic level investment in teaching and learning became evident (2015, pp. 152-3). As institutions began to take an interest in and responsibility for quality, centres for teaching and learning were established nationwide. Alongside this was the emergence of specialist networks, journals, edited books and conferences. This is another important part of the context in which the teaching and learning scholarship mapped in this report has emerged.

The emergence of the international Scholarship of Teaching and Learning movement should also be acknowledged as both carving out a space for this field in academia and also as a stimulus for research activity. In Scholarship Reconsidered, Boyer (1990) redefined academic research as scholarship across four domains – discovery, application, integration and teaching. His research pointed to the central role played by teaching in academics’ work, albeit that it was often taken for granted and not valued. His call was for academics ‘to break out of the tired old teaching versus research debate and define, in more creative ways, what it means to be scholar’ (1990, p. xii), embracing the scholarship of teaching and giving it the same recognition and rewards as other forms of scholarship. Shortly afterwards, there was a change in focus, to consider how teaching affects student learning, and the term scholarship of teaching and learning (SoTL) began to be used (Hutchings and Schulman, 1999). This led to
the emergence of research focused on the disciplines, for example work on signature pedagogies (Shulman, 2005). More recently, SoTL has incorporated a more sociological lens, focusing on the meso and macro context in which teaching and learning is practiced, and paying close attention to how change is enacted in practice (Fanghanel, 2015). Across all of this work there is consensus that SoTL research ‘aims to bring a scholarly lens—the curiosity, the inquiry, the rigor, the disciplinary variety—to what happens in the classroom… it begins with intellectual curiosity, is conducted deliberately and systematically, is grounded in an analysis of some evidence, and results in findings shared with peers to be reviewed and to expand a knowledge base.’ (Chick, nd)

Finally the past twenty years have been marked by both an increase in overall research funding nationally and the growing importance of research activity and outputs in Irish higher education and to higher education institutions. Here the Irish case follows international trends; Clancy (2015, p. 176) reports SCImago research looking at Scopus publications which found that between 1996 and 2011 ‘scientific publications increased by a factor of 4.2’, a higher figure than the average of 2.1. Another interesting trend he notes is the higher than average distribution of R&D expenditure across Irish science disciplines, accounting for 75 percent of this funding, compared to only 7 percent for humanities (2015, p. 178). Research in the teaching and learning field in Ireland needs also to be located in the context of these system level changes in and features of academic work.

**Research on Higher Education**

Although research in the field of higher education has made much progress in recent decades, the dissemination and uptake of this information, and its consequent impact on teaching practice and student learning, have been much more limited (Hughes and Mighty, 2010). A national approach to the consolidation of research in higher education is especially appropriate considering that, according to a recent estimate, 90 percent of higher education research in Europe has a national focus (Teichler, 2005, p. 462). while studies of existing research output in the field of higher education have been made in many other countries and regions - including Australia and New Zealand, Japan, Russia and Latin America (Sadlak and Altback, 1997), South Africa (Bitzer and Wilkinson, 2006), Canada (Jones, 2012), China (Chen and Yu, 2012), and South-East Europe (Zgaga, 2013) - no comparable study exists for Ireland.
This study uses a multi-phased approach, which incorporates a systematic review. Systematic reviews are a growing feature of the study of research outputs in higher education (Bearman et al, 2012), but outside medical and nursing fields (e.g. Cant and Cooper, 2012), they have not been used to map teaching and learning scholarship. National and regional surveys of scholarship have tended to be descriptive and chronological in approach (e.g. Sadlak and Altback, 1997), and have emphasized the relationship between research in higher education and local societal changes. Such considerations are important in an Irish context too, but an investigation of research outputs would also benefit from a more systematic approach.

A thematic approach will be taken to the analysis of the data gathered as part of the present study. Thematic analyses have been carried out into research outputs on a regional scale. Frackmann (1997) surveyed research outputs in higher education in western Europe according to; i) the role and function of higher education; ii) nature of knowledge and learning; iii) coordination mechanisms between society and higher education; iv) learning and teaching; v) higher education and European integration. Teichler (2005) provided an overview of higher education research in Europe according to a fourfold schema; i) quantitative-structural aspects (e.g. access and admission); ii) knowledge and subject related aspects; iii) person- or teaching and learning-related aspects; iv) aspects of institution, organization and governance.

Particularly relevant to this project is the contribution of Malcolm Tight (2003, 2012) who has analysed English-language research outputs in higher education outside North America according to four categories; i) the themes or issues being researched (e.g., Teaching and Learning, Student Experience); ii) the methods or methodologies used (e.g., Documentary Analysis; Comparative Analysis); iii) The extent of engagement with theory; iv) The level at which the research is focused (e.g. individual, institution). Bitzer and Wilkinson’s (2006) summary of international classifications of Higher Education studies and research concludes that Tight’s categorisation is applicable to a national context – in this case South Africa – allowing for some adaptation for local relevance. Such an adaptation would seem appropriate to an Irish context too, and this study proposes to categorise the themes and issues in the Irish teaching and learning research under four broad headers taken from Tight; i) Teaching and Learning; ii) Course Design; iii) Student Experience; iv). Quality. Tight’s four other
categories (system policy, institutional management, academic work and knowledge, and research) fall outside the remit of this study.
Chapter 2 Methodology

The aim of this project was to present a comprehensive picture of published, unpublished, and ongoing teaching and learning research in Irish higher education, with the task to be completed within a six-month period. In designing the study the researchers were conscious of the scope of the task and the need to gather data from a wide range of sources, using a variety of methods. With this in mind, the research design employed a concurrent triangulation strategy (Creswell, 2003) which involved gathering both qualitative and quantitative data, with equal priority being given to the two types of data. The ultimate objective of this type of design was to integrate the findings to address the objectives of the study.

The structure of the design is outlined in Figure 1 below. Three principal phases of data collection ran concurrently, before being combined in a final data analysis phase. Phase 1 involved a systematic review of published research and other outputs identified in a targeted set of sources. Phase 2 focused on a review of national and international conference presentations during a one year period; the aim here was to capture ongoing and unpublished research. Phase 3 focused on identifying research conducted by selected Irish experts’ in teaching and learning research. Each of the phases will be outlined in detail below.

Figure 1: Structure of the methodology
Phase 1 Systematic Review

The systematic review was constructed in line with international guidelines (Gough et al., 2012).

Research Question

What is the extent and characteristics of research on teaching and learning in Irish Higher Education?

Systematic Review Sources

Given the broad scope of the research question we utilised a wide range of sources which were identified based on discussion by the research team (see Table 1). This involved searching a total of 19 diverse sources including academic bibliographic databases, proprietary journal packages, Irish institutional repositories (via Rian.ie), and a search engine (Google Scholar). In addition, to ensure reliability and minimise missing information, these electronic sources were complemented by hand searches of other sources selected for the relevance to the central topic, in particular:

- the key journal in the Irish teaching and learning field, All Ireland Society for Higher Education Journal (AISHE-J).
- Screening the ERIC results from ProQuest alerted us to the fact that individual chapters and presentations in four conference proceedings and two edited publications were not appearing in the database, so these publications were searched manually and screened (n = 419).

Hand searching helped to locate studies not included in electronic databases while also mitigating against missing studies where the keywords chosen by authors did not match the ones used in the search (Hammerstom et al, 2010, p. 25). This combination of database and hand searches has been identified as the optimum method; it is seen as less necessary where complex electronic searches, using highly sensitive search strategies are used (Hammerstrom et al., 2010, pp. 25-6), but essential where simpler search strategies are used as was the case in this project.
Table 1: Sources searched

<table>
<thead>
<tr>
<th>Source</th>
<th>IEEE</th>
<th>ACM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web of Science (all databases)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ebsco Host (academic search complete)</strong></td>
<td>Elsevier</td>
<td>Emerald</td>
</tr>
<tr>
<td><strong>ProQuest</strong> (ABI Inform, ASSIA, Avery index, British Humanities Index, ERIC, LISAP, Physical Education Index, PsycINFO)</td>
<td>Compendex</td>
<td>Rian</td>
</tr>
<tr>
<td>Google Scholar</td>
<td>SciFinder</td>
<td>AISHE-J</td>
</tr>
<tr>
<td>Scopus</td>
<td>CAB</td>
<td>Wiley</td>
</tr>
<tr>
<td>JSTOR</td>
<td>Springer</td>
<td></td>
</tr>
<tr>
<td><strong>Taylor&amp; Francis</strong> (Complete)</td>
<td>Embase</td>
<td></td>
</tr>
</tbody>
</table>

Search Strategy

In developing the search strategy the steering group sought the advice of colleagues from the UCD library and a Proquest Intern based in UCD. A keyword search string was used across all sources. We did not design bespoke search strings incorporating subject headings and controlled language or database specific vocabularies for each academic database. Our strategy was to prioritise using as wide a range of sources, and this was seen as the best way of managing the search process. One of the challenges in crafting the keyword search was finding a specific string that could be replicated across each of the databases as not all of them had the same search functionality. To ensure consistency the team crafted one ‘long and complex’ string for databases with that could facilitate this kind of search, and a backup ‘short and simple’ string for those with more basic functionality. Targeting research conducted by authors within Irish institutions (i.e., targeting geographic location) also required minor modifications to the search strategy. The finalised search terms are included in Table 2 below.
Table 2: Search terms

<table>
<thead>
<tr>
<th>Search terms in Title/Abstract/Topic/Keywords</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Long</strong></td>
</tr>
<tr>
<td>Educat*</td>
</tr>
<tr>
<td>AN (higher OR “higher education” OR tertiary OR “post-secondary” OR universit* OR college* OR institut*)</td>
</tr>
<tr>
<td>AND (teach* OR learn* OR curricul* OR student OR undergraduate OR postgraduate)</td>
</tr>
<tr>
<td><strong>Short</strong></td>
</tr>
<tr>
<td>Educat*</td>
</tr>
<tr>
<td>AN (higher OR “higher education”)</td>
</tr>
<tr>
<td>AND (teach* OR learn* OR student)</td>
</tr>
<tr>
<td><strong>Search terms in Geographic/Address/Location/ Affiliation</strong></td>
</tr>
<tr>
<td>a) AND Ireland OR Irish NOT North*</td>
</tr>
<tr>
<td>Where this was not an option in database:</td>
</tr>
<tr>
<td>Search terms in Title/Abstract/Topic/Keywords</td>
</tr>
<tr>
<td>b) AND Ireland OR Irish</td>
</tr>
</tbody>
</table>

**Search Results & Screening**

The results gathered in total amounted to 9508 items. A detailed description of the search results, including tables of results for each source, is presented in Appendix 2. Results were exported into the selected reference manager, Endnote Desktop. After exporting was completed, all the incomplete Endnote entries were supplemented by manual entry of any missing information. An unexpected finding was that many of the databases did not allow addresses and/or abstracts to be exported and this meant that information for approximately 50 percent of records had to be manually added before they could be screened. After the removal of duplicate entries and a considerable group of immediate exclusions (UK newspaper articles) within the reference manager, the records were reduced to 6820 entries.

Given the large number of sources to be reviewed and the narrow timeframe for the project it was decided to screen using citation, abstract and author address information only. Entries for which abstracts were not located were excluded from the final analysis (n = 162), leaving 6658 records for review.

Detailed inclusion/exclusion criteria were drawn up to manage the screening of records. These criteria specified the location of the researcher in Irish HEIs, the inclusion of education settings at NFQ Level 7 and above, research published since 1990, and research on at least one of a specified range of topics relating to teaching or learning. These criteria were piloted by the Project Steering Group who screened 50 records and then met to discuss their results.
Following this meeting several of the criteria were clarified and amended (see Appendix 3 for a detailed description of the inclusion and exclusion criteria).

Using these finalised criteria each record was then screened by two members of the Steering Group. However, to ensure reliability one of the team members reviewed all of the records. In total, the records were reviewed by one of four researcher pairs. When the results of the screening process were initially reviewed there was a high level of agreement (approximately 85 – 90 percent) which validated the construction of clear inclusion/exclusion criteria. All remaining disagreements were discussed by the two reviewers at the end of the screening phase and a final decision was made with further reference to the agreed criteria. This resulted in the total inclusion of 1775 records for analysis from the systematic review. Figure 2 below provides an overview of the search outcomes.

Figure 2: Overview of systematic review search outcomes
Phase 2 Conference Search

A review of academic conferences (September 2013 - September 2014) was undertaken with the aim of complementing the records identified from the systematic review. Presentations at national and international events during this period which met the inclusion criteria outlined above would be included with the goal of identifying both unpublished and ongoing research. In the case of biannual conferences and conferences held irregularly that did not fall in this period we looked at the last conference prior to September 2013.

A draft list of conferences was compiled using the NAIRTL calendar of events for 2013-14 and suggestions regarding relevant conferences to the research topic were made by the UCD Project Group. A wiki was used for further additions to the list to be made, although limited results emerged through this channel. Overall 62 conferences/meetings/symposia with a teaching and learning focus (National and International) and eight national disciplinary conferences/meetings/symposia with a teaching and learning session or stream were identified. The websites of these conferences were searched for material relevant to our project (usually found through conference programmes or abstract books) with both the citation information and abstracts exported and screened for inclusion/exclusion against the SR criteria. Any presentations for which abstracts could not be located were excluded from the process. Again the screening was conducted by two members of the team, with an agreement rate of 88 percent. In total, the conference screening process yielded 278 papers from 24 conferences for analysis.

Phase 3: Teaching & Learning Experts

A review of the Endnote Desktop file to compare the entries for the teaching and learning experts already added to the wiki to their publications on the web led to the identification of a number of missing references by targeted experts (n = 5). These appeared to be due to the keywords chosen by the authors or indexers not matching the ones used by us in the search.

A wiki was set up to identify T&L experts nationally. The first step involved the UCD project group submitting names; 29 names were identified in this way. Following this, National Forum contacts were contacted and invited to add to the list, resulting in 115 names being identified. Overall, 17 of the 38 institutions affiliated with the National Forum responded to the wiki invitation and reviewed the list, a response rate of 45 percent.
In total 144 experts were identified through this procedure, and institutional websites, with Google and Google Scholar being used to identify relevant publications that had been missed in the previous phases. This worked well for experts from the larger institutions, with well-developed publication listings, repositories and archives. It was less successful in some cases where these searchable resources did not exist. Due to time constraints it was not possible to contact experts directly for additional material. Nevertheless, approximately 500 additional records were hand screened; of which 91 were excluded as there were no abstracts available. Overall there were 222 inclusions from this process. These records were also double screened, with a 99 percent agreement rate.

**Data Analysis**

The first stage of the analysis was to create a Masterfile containing all the records identified via the procedures outlined above. This was then imported into the qualitative data analysis package, NVivo, for analysis. Figure 3 provides an overview of the number of records identified for analysis from each phase of the study described above.

![Figure 3: Overview of the records identified for analysis](image)

Following discussion within the project Steering Group it was decided to conduct the analysis in two stages. Given the inclusion of conference papers in the analysis it was agreed that it would not be possible to conduct a full paper review of all records. Therefore Stage 1 analysis
focuses on the abstracts and bibliographic information (reference information and author institution) imported into Endnote only. This is considered a descriptive or surface analysis, which identifies key aspects of the research being reported. We considered this as a method of mapping the body of research identified through the search process.

At this stage of the analysis, several core categories of coding were agreed upon:

- Publication date and type
- Researcher institutional location
- The disciplinary focus of the research.
- The themes of the research based on the categories proposed by Tight (2012)
  - Teaching and Learning
  - Course Design
  - Student Experience
  - Quality

The qualitative data analysis package NVIVO, facilitated analysis based on systematic coding and material was coded to more than 1 thematic node where appropriate. The focus here was on the major themes identified in the abstract, and the norm was that between 1 and 3 of these were coded for each, for example PBL and technology enhanced learning. We did not code for themes that appeared peripheral within the abstract.

Stage 2 of the analysis (subject to additional funding) will involve isolating the records for which full papers can be sourced. In Stage 2 a full text analysis will consider; i) the findings reported; ii) the methods or methodologies used (e.g., documentary analysis; comparative analysis); iii) the extent of engagement with theory; iv) the level at which the research is focused (e.g., individual, institution). This will allow full comparability with Tight (2012).

**Consideration of Strengths and Limitations**

Before presenting the main findings, it is important to consider the strengths and limitations of the methodology and approach, and the implications for the credibility of the findings.

In terms of the strengths of the methods, a key point is the multi-phased design. As noted earlier systematic review techniques have become increasingly common in education, and
represent a valuable technique for synthesising research. However the technique is not without limitation, with particular challenges evident in accessing unpublished research. Therefore the systematic review was complemented by two additional, targeted searches of conference and known experts. We are confident that the overall design has helped to ensure that a broad net was cast to identify relevant research.

A major limitation relates to the analysis conducted for the present report. The volume of research identified necessitated a two staged approach to the analysis, with the findings reported here based on an initial examination of the title and abstract information of each record. We recognise that this limits the level of interpretation possible, and the issues that can be examined. However this is the first stage of the analysis, and forms only part of an ongoing analysis plan. The second stage of the analysis will allow for a deeper interpretation of the identified research based on the full paper/published record. We are confident that, building on the initial findings reported here, there is a huge amount to be learnt from the further examination of this corpus. A final strength of the approach adopted to the present study is the clear theoretical focus, represented by the use of Tight’s framework to structure the analysis. In conclusion, we are confident that the strengths of the present approach outweigh the limitations.
Chapter 3 Main Characteristics of Irish Teaching and Learning Research

This chapter presents the key findings from Stage 1 of the analysis of 2275 records relating to research on teaching and learning in Irish higher education settings.

**Growth in Publications**

As Figure 4 suggests, an exponential growth trend is evident in teaching and learning publications, a trend that is evident internationally. After a period of relative stability from 1990 until 1998, there is a steady increase in activity between 1998 and 2007. The year 2008 represents a take-off point, and from 2008 until 2014 there is an increase in the volume of publications in the field, albeit that there is a slight dip in 2012.

![Figure 4: Sources by Year of Publication 1990-2014 (n = 2240)](image)

It should also be noted that the post 2008 increase in teaching and learning publications comes at a later stage than the period of general increase in research publications identified by Clancy (2015). This suggests that the field may have a distinctly different set of drivers.

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1 As we collected data only for early 2015, we have not included data for that year here.
compared to other research areas in Ireland. Paradoxically the highest growth evident in teaching and learning research comes during a period of recession, when employment in higher education institutions is contracting.

As Figure 4 suggests, this upward trend in teaching and learning research coincides with the emergence of funding for teaching and learning activities, networks and research in Ireland. The evidence of this study suggests that these supports may have acted as a trigger or stimulus for teaching and learning research. The establishment of NAIRTL appears to have had a major and direct influence with 315 of the inclusions from NAIRTL conference proceedings, 20 from NAIRTL edited books and 27 from the 2012 6th Annual NAIRTL conference, a total of 362 or 16 percent of all the Irish teaching and learning research located.

**Types of Irish Teaching and Learning Publications**

What is evident from Figure 5 below is that journal articles are the most common type of publication in the Irish teaching and learning field. This is important given that journal articles are the most visible of the publication formats for other academics and researchers and are also the publications considered to have the highest prestige and impact.

![Figure 5: Sources by Publication Type (N = 2275)](image)
Overall the search found publications in more than 400 Journals, the majority published outside Ireland. The journals with the most publications (10 or more) are summarised in Table 3 below. Unsurprisingly the leading journal is AISHE-J, which was selected for hand search in the systematic review. The majority, eleven of the eighteen journals, are disciplinary teaching and learning journals. Only three of the journals are Irish journals.

Table 3: Journals with 10 or more Irish T&L publications between 1990-2015.

<table>
<thead>
<tr>
<th>Journal Name</th>
<th>Number of Publications</th>
</tr>
</thead>
<tbody>
<tr>
<td>AISHE-J: The All Ireland Journal of Teaching &amp; Learning in Higher Education</td>
<td>51</td>
</tr>
<tr>
<td>Nurse Education Today</td>
<td>42</td>
</tr>
<tr>
<td>Nurse Education in Practice</td>
<td>25</td>
</tr>
<tr>
<td>Irish Educational Studies</td>
<td>21</td>
</tr>
<tr>
<td>European Journal of Dental Education</td>
<td>19</td>
</tr>
<tr>
<td>European Journal of Engineering Education</td>
<td>17</td>
</tr>
<tr>
<td>Education and Training</td>
<td>16</td>
</tr>
<tr>
<td>Irish Journal of Medical Science</td>
<td>14</td>
</tr>
<tr>
<td>Journal of Advanced Nursing</td>
<td>14</td>
</tr>
<tr>
<td>Medical Teacher</td>
<td>13</td>
</tr>
<tr>
<td>Chemistry Education Research and Practice</td>
<td>12</td>
</tr>
<tr>
<td>Innovations in Education &amp; Teaching International</td>
<td>12</td>
</tr>
<tr>
<td>International Journal of Engineering Education</td>
<td>12</td>
</tr>
<tr>
<td>Teaching in Higher Education</td>
<td>11</td>
</tr>
<tr>
<td>Computers and Education</td>
<td>11</td>
</tr>
<tr>
<td>Journal of Further and Higher Education</td>
<td>10</td>
</tr>
<tr>
<td>Medical Education</td>
<td>10</td>
</tr>
<tr>
<td>BMC Medical Education</td>
<td>10</td>
</tr>
</tbody>
</table>

Conference papers and proceedings are another important category. It should be noted here that these outputs are not included in Tight’s study. However the findings of this study suggest that their inclusion gives a much better picture of research activity, and is especially useful as a method of capturing emerging research in the field.

Finally the high number of conference papers located through the search can be linked to the research design; while only 45 were located via the systematic review (across the timeframe from 1990-2105), 278 were located via a search of 2013-2014 conference papers and 31 via a
search of expert publications. An important question for future research would be whether these conference presentations are subsequently developed into journal articles or other publications.

**Institutional Breakdown**

Publications were located for 84 percent of the institutions affiliated with the National Forum (n = 32). The distribution across institution types is detailed in Table 4 below. (The data for all 38 NF affiliated institutions are available in Appendix 4).

<table>
<thead>
<tr>
<th>Institution type</th>
<th>Number of publications</th>
<th>Average per institution</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>University (n = 7)</td>
<td>1640</td>
<td>234</td>
<td>317-106</td>
</tr>
<tr>
<td>Institute of Technology (n = 15)</td>
<td>659</td>
<td>44</td>
<td>310-11</td>
</tr>
<tr>
<td>Other (n = 17)</td>
<td>169</td>
<td>10</td>
<td>80-0</td>
</tr>
<tr>
<td>Total:</td>
<td>2468</td>
<td>63</td>
<td>--</td>
</tr>
</tbody>
</table>

The University sector had the highest number of publications overall, and the highest average per institution. There was also less variation in the range of number of publications. However, two outliers do exist in this pattern. The first is the presence of DIT in the top producing institutions (which is discussed in more detail below). There is a significant gulf between the number of records associated with DIT and those associated with other ITs. The other outlier is RCSI, which is the only institution in the other grouping to appear in the top 10 performing institutions.

In Table 5 the institutions with the most teaching and learning research are identified. (The data for all 38 NF affiliated institutions are available in Appendix 4). The top two institutions in Table 5 emerge as having a particular strength in teaching and learning research, with more records located via the search than might be expected given their student numbers and their overall scientific publication outputs.
Table 5 Institutions with Highest Level of SoTL output (Phase 1 and 2 only)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. UL</td>
<td>280</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>2. DIT</td>
<td>277</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>3. UCD</td>
<td>268</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>4. UCC</td>
<td>261</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. TCD</td>
<td>256</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>6. DCU</td>
<td>171</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>7. NUIG</td>
<td>143</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

It is interesting to explore how research activity in this field compares with overall scientific publication outputs reported by Clancy (2015). This suggests that in some institutions teaching and learning research is a focus or institutional priority. Critical mass of individuals working in this area may also be an issue. One pattern that would be interesting to explore in the next stage of the analysis is whether high levels of publications are associated with institutions with a small number of very active researchers, or whether a more dispersed distribution of scholars and expertise exists. What is evident is that there are different models in operation in different institutions. This has implications in terms of strategic planning and growing scholarship of teaching and learning at an institutional level. From the analysis to date it is evident that institutions with research repositories perform more strongly than those without. Open access publications were easily located in our digital searches.

It should be noted that the evidence from this study suggests that collaboration across institutions is limited, with collaboration of this kind evident in fewer than ninety cases. This is something we would explore further in stage 2 of the analysis. It is a key issue, as inter institutional collaboration is one of the goals of the National Forum. The disciplines of Medicine and Engineering are characterised by more international collaboration than is evident in other disciplines. This would be another key issue to explore further in the full paper analysis.

Different levels of participation in the expert phase led to the results from that phase not being included here, to avoid a bias in favour of institutions with more active participation (UCD and DCU in particular).
Finally it should be noted that although the majority of the publications focus on teaching and learning in and across Irish higher education institutions, this context cannot be assumed. The inclusion/exclusion criteria was institutional affiliation and so authors will have been included who are researching teaching and learning in other contexts. It will require the full paper analysis to pinpoint this research, another priority issue for future analysis.

**Disciplinary Focus of Research**

The majority of teaching and learning research located had a disciplinary focus. Twenty-eight percent (n = 632) did not have a disciplinary focus and can be described as general pedagogy. The breakdown of the scholarship focused on teaching and learning across the broad disciplinary areas is detailed in Figure 6, below.

![Figure 6: Breakdown of Disciplinary T&L Research](image)

STEM subjects dominate overall, with more than 1/4 of all records (n = 575). Health Sciences follows closely behind (n = 561), including two prolific sub fields, Medicine and Nursing. The Social Sciences (including education as the dominant subfield) represents 14 percent of the records, with Humanities (with languages as a dominant subfield) and Business (where
accounting was the major subfield) each representing 8 percent. Two absences can be noted here. Firstly, there was a small proportion of interdisciplinary research in the sample, accounting for only 1 percent of the records located. Secondly, although Sociology is seen as a central discipline in the scholarship of teaching and learning internationally, the discipline of Sociology accounted for only 1 percent of all records.

**Conclusion**

In this section the sources located in this search have been analysed by year of publication, publication type, institution and discipline. The diversity and range of the field is evident here. This will be further explored in the next section, where the substantive themes and issues are identified.
Chapter 4 Irish Teaching and Learning Research: Overview of Themes and Issues

Introduction

This study has used the four major themes and issues identified by Tight (2012) to map the substantive focus of research on Irish teaching and learning;

- Teaching and Learning
- Course Design
- Student Experience
- Quality

The research located by this research is presented under each of the four major themes and issues identified by Tight (2012). As evident from Table 7, Irish teaching and learning research includes research relevant to all four categories, with course design the largest and student experience the smallest category evident among the records identified.

Table 7: Overview of major themes and subthemes as per Tight

<table>
<thead>
<tr>
<th>Overview of major themes and subthemes</th>
<th>Number of records coded</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Research on course design</td>
<td>1406</td>
</tr>
<tr>
<td>Major subtheme: Technology enhanced learning</td>
<td>663</td>
</tr>
<tr>
<td>2. Research on teaching and learning</td>
<td>1181</td>
</tr>
<tr>
<td>Major subtheme: Theories of learning</td>
<td>390</td>
</tr>
<tr>
<td>3. Research on quality</td>
<td>663</td>
</tr>
<tr>
<td>Major subtheme: Teaching interventions or module enhancement</td>
<td>197</td>
</tr>
<tr>
<td>4. Research on student experience</td>
<td>356</td>
</tr>
<tr>
<td>Major subtheme: Diversity</td>
<td>130</td>
</tr>
</tbody>
</table>

In the remainder of this chapter, each of these themes is presented. The two major themes, Course Design and Teaching and Learning are discussed in some detail. The two minor themes are summarised more succinctly.
Course Design

Course design emerges as the major focus of the Irish teaching and learning research located in this study, with 62 percent of all studies related to this theme. There are three major subthemes evident, technology enhanced learning, workplace and employment skills and assessment. Each of these will be discussed in more detail below.

Technology Enhanced Learning

As is evident from Figure 7 technology enhanced learning is the major subtheme, with 30 percent of all material relating to this theme. Similar to Tight’s (2012, p. 70) findings, this theme combines descriptive overviews, ‘how-to’ guides and research with a focus on application and effectiveness. The emergence of this research from 2001 onwards is linked to the wider changes in Irish higher education outlined in Chapter 1. For example Glynn and Thorn’s (2011) research examines the use of technology ‘to address pedagogical and logistical challenges in higher education in Ireland’ (see also MacKeogh and Fox, 2009).

Under this broad header was research focused on a range of technologies is evident (see Figure 8 below for the principal themes).
Most frequently, research classified under this theme can be described as general, focusing on e-learning or on-line learning. There was some focus on mapping the new landscape of TEL (see for example MacLaren, 2004) and ‘tips and tricks’ for faculty (for example Ward 2010). Research under this theme also examined moving course or modules on-line (for example Seery, 2012 which examines the rationale for such a move in a Chemistry module, the module redesign and an evaluation of the changes).

There was notable overlap with technology enhanced learning and assessment, and many studies examined or proposed the use of online or computerised assessments for summative, formative or peer assessment (for example Cantillion et al., 2004). A smaller number of studies examine plagiarism detection software (for example Ledwith and Rísquez, 2008). A second area of overlap was staff and TEL, particularly professional development issues such as appropriate staff training (for example Donnelly, 2004), faculty orientations to TEL and barriers to adoption of TEL.

The use and development of VLEs and other online resources was another important theme. Authors reported creating and housing their TEL innovation on Moodle or Blackboard and it
was clear that these platforms have become essential tools for many. There were overlaps with blended learning (for example Egan, 2011) and assessment (for example Lane, 2014) under this theme.

Across all of the TEL themes many publications were also focused on the potential technology offers for student engagement (for example see Hernandez and Rankin, 2014; O’Leary, 2013; Ryan, 2013). This was a particular concern of research on collaborative learning, videos and screencasts, social media and clickers. Some of this research positions students as digital natives, presenting their use TEL as ‘natural’ (for example Thornton and Lang, 2014).

*Workplace and Employability Skills*

The second major theme under course design focuses on developing students’ skills for future employment. Professionalism was a major focus here, and comprised 60 percent of records coded to this theme (n = 143). Ethics and professionalism were a concern of educators across disciplines (for example Conlon and Henk, 2010; Scott, 2011), but were particularly associated with the Health Sciences (for example see Cusack et al., 2013; O’Connor et al., 2013; Strawbridge et al., 2013). Practice placements (n = 59) and Entrepreneurship (n = 27) were other important research areas under this theme. Finally, there was some overlap with staff professionalism in the work of academic developers researching formal training as a means to develop and enhance lecturers’ professionalism (see for example onne lly, 2008).

*Assessment*

In total 185 studies focused on student assessment and feedback. This theme captured the centrality of assessment to both faculty work and student learning, and these were seen as intertwined (see for example Harvey et al., 2013). A number of studies pinpointed how assessment drives learning (see for example McNulty, Guerin and Staunton, 2013; Ryan, 2013; Scott and Fortune, 2013). ‘How to’ guides for staff were particularly prominent under this theme (see for example O’Farrell, 2002; O’Neill and Noonan, 2011). The potential of technology for managing assessment has already been discussed. A final theme is student writing (see for example Delahunet al., 2012; O’Sullivan, 2010).
Research on Teaching and Learning

The second most important theme across the corpus is teaching and learning, with 52 percent of records related to this theme. There are three major sub themes evident, theories of learning, student engagement and teaching and learning in the disciplines.

![Bar graph showing research sub-themes](image)

Figure 9: Overview of Research on Teaching Sub-Themes (n = 1187).

The major theme here is theories of learning, with 17 percent of all sources relating to this theme. Problem Based Learning is the most researched and discussed theory here (n = 122). The major scholar in this area is Roisin Donnelly (DIT), with 22 publications on PBL in the corpus, with a focus on PBL in a professional development context and academic staff in the role of students (see for example Donnelly, 2009; Donnelly, 2013). There is work outlining and discussing this approach (for example Barrett et al., 2005). There is also work on PBL across a wide variety of disciplinary areas (see for example Connolly, 2008; Dodd, 2007; Gilvary, 2011; Kelly and Finlayson, 2007; Pettigrew, 2008).
Reflection is identified as another major theory of learning (n = 84). In her work Redmond (2004) introduces the concept of reflective teaching, a concept that is widely used in other studies (for example Bolger, 2012; Logue Collins et al., 2013). This concept is often linked to professionalism via reflective practice (for example Guerandel, 2013). Reflection is also a core skill for students (for example Waddington and Wright, 2006) or desired graduate attribute. There is some overlap with this theme and assessment, for example in discussions of different forms of reflective writing (for example Dunne and Ryan, 2013; Cosgrove and Slattery, 2014; Goggin, 2013).

Other important theories include active learning (see for example Buckley et al., 2011; Rueda and Gilchrist, 2011), peer assisted learning (see for example Bennett et al., 2014; Kieran and O’Neill, 2009; Reid et al., 2000), meta-cognition (see for example Batteson et al., 2014; Wallace, 2011), multiple intelligences (Hyland and McCarthy, 2009), threshold concepts (Foley, 2008; Graham and Coughlan, 2010), teaching for understanding (Blackshields, 2011) and critical thinking (Ahern et al., 2012; O’wyer et al., 2014).

There is considerable overlap between this theme and course design, with Tight locating it under this header. However the research captured under this theme was focused on teaching and learning and so it was considered appropriate to include it here.

Student engagement is another central theme across the corpus, and emerges as the central concern of educators with 14 percent of research discussing this theme. The majority of this research focused on implementing a range of strategies for enhancing student engagement at module level (for example Buckley and Reidy, 2014; Moore and Ryan, 2006), programme level (for example Ní Ghuidhir, 2011; Ryan, 2011) and institutional level (for example Bermingham, 2013). Innovations include the flipped classroom, the use of multimedia and other technologies, and the introduction of active learning strategies in lectures, tutorials and laboratories.

This research highlights many educators’ creative, analytical, reflective and problem solving orientations. It is suggestive of an awareness of pedagogical challenges and a lack of fatalism about these (see for example Doyle et al., 2013). It is also indicative of an orientation which
values students and has student learning and a desire for student success at its centre (see for example Gorman et al., 2011; Mahon and Crowley, 2012).

As was mentioned earlier, there is considerable overlap between this theme and technology enhanced learning (for example Heaslip et al., 2014); there are also overlaps with theories of learning, including active learning, PBL and peer-assisted learning. Finally there is an overlap with the quality theme; many of these initiatives were module enhancement initiatives.

The third major theme here is teaching and learning in a discipline. This work stretches across a wide range of disciplines and subjects. The focus of this work is developing and sharing discipline-specific interventions that support learning. Some examples are included in Figure 10 below.

![Figure 10: Examples of disciplinary-focused T&L work](image)

**Chemistry**  
• Sheehan and Childs 2013

**Engineering**  
• O'Dwyer 2008  
• Fitzpatrick et al 2009

**Languages**  
• Bruen 2013

**Mathematics**  
• Gill and O'Donoghue 2007  
• Meehan 2011

**Teacher Education**  
• O'Donahue and Harford 2009

**Medicine**  
• Cantillion and Wood 2011  
• Finucane et al 2010  
• Spooner et al 2007

**Nursing**  
• Cowman 1998  
• Drennan and Hyde 2008

**Research on Quality**

The third most important theme in Irish teaching and learning research is quality (n = 663). As is evident from Figure 11 the major sub theme here is teaching interventions and module enhancement.
Studies located under this theme are focused on exploring and solving problems with a teaching and learning intervention. This sub theme includes module or programme level enquiry (see for example O’wyer, 2006; Parkinson, 2009). There is an overlap evident with theories of learning. For example studies drawing on Threshold Concepts, Integrative Learning or PBL report on interventions inspired by that literature (see for example Higgs, 2008). There is also an overlap here with the previous theme of teaching and learning in the discipline and much of this has a focus on enhancing the quality of teaching. Finally there is overlap with technology enhanced learning (see for example Spooner et al., 2011). A second focus under this theme is skills-based interventions such as the introduction of study skills courses (see for example McGee, 1991) or research training (see for example Pursell, 2011).

Student feedback and assessment of teaching is the second sub theme identified. This was an important research area in the health sciences (see for example Wedgeworth et al., 2011; Wright et al., 2010). In medicine there was research on DREEM (Dundee Ready Educational Environment Measure), used to evaluate how students view their placement experiences and their course more generally (see for example Finn et al., 2014; Hammond et al., 2012). Other research examined student preferences for different learning settings (for example Delaney et al., 2012). There was also a focus on the introduction of standardised and centralised student
feedback, both at module, programme and institutional level (for example research on the Irish Study of Student Engagement including McKenna et al., 2014 and Drennan et al., 2014).

**Student Experience**

This theme was the one that had the fewest records in the corpus coded to it (n = 356). There are two methodological issues that might explain this. Firstly, the coding based on abstracts only may have been a factor here. Secondly, our exclusion criteria meant we did not include a range of papers on student wellbeing and health, or personal adjustments to higher education, topics that would belong under this header.

The major sub theme here is diversity (n = 130), a theme that captures both the heterogeneity of the student body accessing Irish higher education and the emergence of equality legislation and policies. Research here seeks to capture the experiences of and challenges faced by non-traditional learners (see for example Keane, 2011; Deady et al., 2011; Kenny et al., 2010).

![Figure 12: Overview of Sub Themes Research on Student Experience](image)

A central issue driving much of this work is the accommodation of and provision of supports for non-traditional learners. Adult and mature learners are a particular focus (for example see Connolly et al., 2007, Fleming and Murphy, 2007; Kelly, 2005; O’Leary, 2013). There is also a body of work on students with disabilities (see for example Donnelly 2007; Evans 2014; Nolan et al., 2014). There is less of a focus on ethnicity, or difficulties experienced by
students for whom English is not a first language (but see Cantillon, 2004). Finally, another issue that emerges under this sub theme is teaching about diversity.

**Conclusion**

Felton (2013, p. 122) outlines five principles for good practice in scholarship on teaching and learning: ‘Inquiry focused on student learning, grounded in context, methodologically sound, conducted in partnership with students, and appropriately public’. The evidence presented in this chapter suggests the Irish teaching and learning research in this study meets three of these five principles. The work is focused on student learning, grounded in context (which includes relevant theories of learning) and the results have been made public in a variety of different publication formats. One surprising finding was the emergence of theories of learning as a central focus of research. This contrasts with Felton’s (2013, p. 121) characterisation of US research as largely un-theoretical. An important component of the context Felton identifies is the extent to which research is grounded in prior research in the field. This is another potentially interesting focus for stage two of the analysis via a citation analysis across the field. We have not yet assessed the extent to which the research is sound methodologically and this is another potential task for stage two of the analysis of this data. It is clear from the 2275 records analysed that Irish research in this field is not characterised by student involvement in the inquiry and this is a clear gap that can be identified.
Discussion

The purpose of this six-month ‘snapshot’ project was to map the extent and characteristics of research on teaching and learning in the Irish higher education field. This is the first such study focused on Ireland, and the first systematic study of teaching and learning research at a national level. The project set out to capture the extent and key characteristics of such research in Ireland between 1990 and 2014, including the main fields of interest, the types of publication and historical development. The resulting corpus of research represents a comprehensive catalogue of research on teaching and learning in higher education conducted by researchers affiliated with Irish institutions.

Summary of Key Findings

Growth in Publications
An exponential growth trend is evident in Irish teaching and learning publications, mirroring an international trend. There is a steady increase in activity from 1998, and a large increase from 2008. This upward trend coincides with the emergence of funding for teaching and learning activities, networks and research in Ireland, but, paradoxically, the highest growth coincides with a period of recession and contraction in higher education employment.

Type of Publication
Journal articles are clearly the most common type of publication. This is important in that this is the most visible publication format for academics and researchers and tends to have the highest prestige and impact. The majority of the journals are disciplinary teaching and learning journals. Although the leading journal is AISHE-J, the majority of journals are published outside Ireland. This study differs from many other comparable studies in its inclusion of conference papers and proceedings, which is especially useful as a method of capturing emerging research. A question for future research is whether such conference presentations are subsequently developed into journal articles or other publications.

Institutional Breakdown
The University sector had the highest number of publications overall, and the highest average per institution. However, DIT is the second largest producer. A comparison with overall scientific outputs in each of these institutions suggests that in some institutions, teaching and
learning research is a priority. The next stage of analysis might examine whether institutionally high levels of publication are associated with a small number of very active researchers or a more dispersed distribution of scholars. It is notable that institutions with research repositories perform more strongly than those without. The evidence also suggests that collaboration across institutions is limited, with Medicine and Engineering showing the most international collaboration.

**Disciplinary Focus**

The majority of teaching and learning research had a disciplinary focus, but 28 percent did not and may be described as general pedagogy. STEM disciplines dominate, followed closely by Health Sciences. Interdisciplinary research accounted for only 1 percent, as did Sociology, despite its centrality to the discipline of teaching and learning internationally.

**Themes and Issues - Course Design**

Of the four major themes and issue identified by Tight (2012), the dominant theme identified in Irish research is course design, followed by teaching and learning, then quality, and finally student experience. 62 percent of all records focused on course design, with almost half of those focused on technology enhanced learning, amounting to 30 percent of all material surveyed, and becoming particularly prominent from 2001. Under this broad header research was focused on a range of technologies, including VLEs, blended learning and collaborative learning. There was a prominent interest such subjects as online or computerised assessment and the use of technology in professional development. Under course design, other prominent sub-themes were the development of students’ skills for future employment, and student assessment and feedback.

**Themes and Issues - Teaching And Learning**

62 percent of all studies related to this theme. The three main sub-themes are, in this order, theories of learning, student engagement and teaching and learning in the disciplines. Among theories of learning, particular interest is shown in Problem Based Learning, but there is also interest in other areas including reflection, active learning and peer assisted learning. Publications focused on student engagement address a range of innovations at module, programme and institutional level, from the flipped classroom to active learning strategies.
Such research interest is indicative of an awareness of pedagogical challenges and an orientation towards student-centred learning.

Themes and Issues - Quality
The major sub-theme here is teaching interventions and module enhancement. This includes module or programme level enquiry, or interventions as the introduction of study skills courses or research training. A second sub-theme is student feedback and assessment, a particularly important area in health sciences.

Themes and Issues - Student Experience
This theme had the fewest records in the corpus (n=356). Though methodological issues (coding based on abstracts, exclusion criteria) may play a role, there are notably fewer in this category. The main sub-theme here is diversity, a theme which captures both the heterogeneity of the student body accessing Irish higher education and the emergence of equality legislation and policies. There is also a body of work on adult and mature learners, and on students with disabilities.

The findings presented here allow for some initial recommendations to be made, with the scope for further reflection following the second stage of the planned analysis. The next section captures the key recommendations to date.

Recommendations
- Higher education institutions should use the information gathered in the present study to showcase the research undertaken to date in this area. There is potential for significant learning from this corpus of research on teaching and learning by researchers in Irish institutions.
- The findings relating to the timeframe of the growth of research in this area highlight the importance of research funding and support in this field. We recommend that the National Forum and other organisations continue to develop funding streams to support research in this area.
- Researchers interested in this area should reflect on the information regarding areas of high and low volume research to inform a strategic approach to research, one which focuses on the gaps identified in the present study.
• Institutions should reflect on the possible models of scholarship represented in the findings. Do institutions benefit more from a distributed model of research activity, with expertise and activity spread across the institution, or from a more contained model, as might be represented by the establishment of a research centre built around a small number of experts?

• We noted that some institutions might be represented more extensively in the present study because of the availability of a comprehensive institutional repository of open access research. We recommend that instructions continue to promote the submission of research publications in such repositories and the open-access nature of the material once in these repositories.

• One way for researchers to maximise the accessibility of their research though the strategic use of keywords and abstract content. We found that some abstracts did not contain enough material to draw conclusions about the research and this could be avoided through the use of shared language. We also found that there was a lack of uniformity in keyword use. For example, some authors did not use the key word higher education (or synonyms) and such research was only located through the hand search of experts’ publications, and not through the systematic review. We recommend that those undertaking research on teaching and learning in Ireland would agree a set of keywords for future publications, which would promote identification of their research.

Recommended keywords: higher education, Ireland, teaching in higher education, student learning, student experience, course design (the final four are derived from Tight’s (2012) thematic framework).

• This study has captured the body of research to date, but the question remains, to what extent has this research informed practice in Irish higher education settings? We recommend that work is begun to audit the evidence of knowledge translation and transfer in teaching and learning research in Ireland.

• A major recommendation that we can confirm is planned is the development of a more searchable/usable digital resource capturing the 121 page bibliography that has resulted from the present study.

Proposed Next Steps

• In the short term (July-August) the small amount of remaining funding will be used to employ researcher part time to do more extensive coding on a subset of publications
(publications from 2003 (n=38) and 2013 (n=321) have been chosen as they are close to the trend line). We will code these for methods or methodologies used, the extent of engagement with theory or the level at which the research is focused (e.g. individual, institution). This work will allow comparability with Tight (2012), whose analysis looks at publications from two years (2000 and 2010), and will be important for the second journal publication we plan to complete.

- With technical support from the National Forum, we plan to develop a searchable/usable digital resource capturing the 121 page bibliography that has resulted from the present study.

- In the medium term we will seek funding to complete the stage 2 full text analysis of the 2275 records and to answer the outstanding questions and critically evaluate the field.
Conclusion

This six-month ‘snapshot’ project is the first systematic study of research focused on teaching and learning at a national level and brings together a considerable corpus of Irish teaching and learning research, 2275 studies in total. The project has produced a bibliography of this work, which will be developed into an open access and searchable online resource. The report presents an analysis of the abstracts and bibliographic information from the 2275 records mapping the corpus by year of publication, publication type, institution and discipline. The diversity and range of the field is evident here. Finally, drawing on the work of Tight (2012), the report presents a thematic analysis of the corpus.

The mapping exercise highlights a major area of activity in higher education which often goes unrecognised and unrewarded. It constitutes for the first time a body of knowledge requiring further interrogation and with considerable potential to stimulate further investigations and inquiry. Although we are left with questions requiring an analysis of the full text articles, books, reports and papers, a considerable amount has been achieved in a very short period of time.
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For the full bibliography of teaching and learning research identified please see the Bibliography (Appendix 5)
Appendices

Appendix 1: Research Project Team Membership

**Steering Group**

- Dr Sara O'Sullivan (Lead Researcher) - UCD School of Sociology
- Dr Amanda Gibney - UCD School of Civil, Structural & Environmental Engineering
- Dr Suzanne Guerin - UCD School of Psychology
- Dr Michael Staunton - UCD School of History and Archives
- Dr Manolis Kalaitzake - UCD School of Sociology

**Project Group**

- Professor Gavin Barrett - UCD Sutherland School of Law
- Dr Lorraine Brennan - UCD Institute of Food and Health, UCD Conway Institute
- Dr Mike Casey - UCD School of Chemistry and Chemical Biology
- Dr Crystal Fulton - UCD School of Information and Library Studies
- Dr Eilis Hennessy - UCD School of Psychology
- Mr Peter Hickey - UCD Library
- Dr Martin McNamara - UCD School of Nursing, Midwifery and Health Systems
- Dr Jonathan McNulty - UCD School of Medicine and Medical Science
- Dr Maria Meehan - UCD School of Mathematical Sciences
- Dr Niamh Moore-Cherry - UCD School of Geography, Planning and Environmental Policy
- Dr Geraldine O'Neill - UCD Teaching and Learning
- Professor Andrea Prothero - UCD School of Business
- Dr Sue Rackard - UCD School of Veterinary Medicine
### Appendix 2: Breakdown of phase 1 (systematic review) search results

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Appendix 3: Inclusion/Exclusion criteria

Inclusion Criteria

1. Research conducted by researchers/authors based in one or more of the 38 institutes of higher education in the Republic of Ireland associated with the National Forum (see below)
2. T&L research in Irish education at NFQ level 7 and higher
   a. Entry does not have to be on Irish classroom i.e. comparative or theoretical + Irish address will be included
   b. Multiple levels will be included e.g. if research is on HE plus or compared to primary/secondary
3. Research conducted from 1990 onwards
4. Research included in formal online searchable academic databases including EBSCO, Web of Science etc.
5. Research focusing on one or more aspects of teaching and learning practice (i.e. not just mentioned in conclusion and more than 50 percent of content), including:
   a. curriculum and programme/curriculum design and review in HE
   b. transitions to, within and beyond HE
   c. student experience and student learning in HE
   d. intrinsic and extrinsic motivation of students in HE
   e. theories of learning
   f. completion and retention in HE
   g. teaching research linkages
   h. quality enhancement, assurance and improvement in HE
   i. professional development and ethics within curricula in HE
   j. use of institutional data as early warning system for intervention in HE
   k. academic support services for students in HE
   l. technology assisted learning
   m. student workload, assessment and feedback in HE
   n. diversity within HE
   o. internationalisation in HE
   p. internships and community based learning in HE
   q. peer and academic mentoring in HE
   r. HE learning environment
Exclusion Criteria

1. Research conducted by researchers/authors based in institutes of higher education outside the Republic of Ireland or institutes not associated with the National Forum
   a. Research on HE in Northern Ireland
2. T&L research in Irish education at NFQ level 6 and below
3. Research conducted prior to 1990
4. Research on topics other than teaching and learning practice e.g.
   a. Research on general policy making in HE (T&L policy would be included).
   b. Research on institutional structures and management in HE
   c. Research on work practices and workload in HE
   d. Research on funding of HE institutions
   e. Research on research funding and prioritisation in HE
   f. Research on gender bias in HE
   g. Research on participation rates and grant systems in HE
   h. Research on non-academic support services in HE
   i. Research on teacher/academic training and professional development
   j. Research or reports on KPIs/metrics such as staff: student ratios, academic: admin ratios within HE
   k. Research on drugs and alcohol use amongst students in HE
   l. Research on mental health and wellbeing amongst students in HE
   m. Research on social life, extracurricular activities and outreach activities of students in HE
   n. Research on staff retention, motivation and promotion in HE
   o. Research on religious, moral or spiritual dimensions of education

5. Newspaper and magazine articles, book reviews.
6. Research published in languages other than English and Irish
7. Research not included in online searchable academic databases.
8. If insufficient evidence presented in abstract that it meets inclusion criteria, exclude.

Higher Education institutions associated with the National Forum

1. Dublin City University
2. National University of Ireland, Galway
3. National University of Ireland, Maynooth  
4. Trinity College Dublin  
5. University College Cork  
6. University College Dublin  
7. University of Limerick  
8. Mary Immaculate College  
9. Mater Dei Institute of Education  
10. National College of Art and Design  
11. St. Patrick’s College  
12. St. Angela’s College  
13. Royal College of Surgeons in Ireland  
14. Athlone Institute of Technology  
15. Cork Institute of Technology  
16. Dun Laoghaire Institute of Art, Design and Technology  
17. Dundalk Institute of Technology  
18. Galway-Mayo Institute of Technology  
19. Institute of Technology, Blanchardstown  
20. Institute of Technology, Carlow  
21. Institute of Technology, Sligo  
22. Institute of Technology, Dublin  
23. Institute of Technology, Tralee  
24. Letterkenny Institute of Technology  
25. Limerick Institute of Technology  
26. Waterford Institute of Technology  
27. Dublin Institute of Technology  
28. College of Computer Training  
29. Dublin Business School  
30. Griffith College Dublin  
31. Hibernia College  
32. IBAT College Dublin  
33. Institute of Physical Therapy & Applied Science  
34. The Irish College of Humanities and Applied Science  
35. Newpark Music Centre
36. Setanta College
37. St. Nicholas Montessori
38. The Open Training College
## Appendix 4: Publications by institution (all phases)

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<sup>3</sup> Teaching hospitals associated with one of the listed institutions.
Appendix 5

Bibliography: Existing Research Output focused on Higher Education Teaching and Learning in Ireland 1990-2015

Sara O’Sullivan
Amanda Gibney
Suzanne Guerin
Michael Staunton
Manolis Kalaitzake

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