

**Educator voices on learning analytics: Exploring staff perspectives on potential, challenges and professional development needs**

**Catherine Deegan**  
**[Catherine.Deegan@TUDublin.ie](mailto:Catherine.Deegan@TUDublin.ie)**  
**School of Electrical and Electronic Engineering,**  
**City Campus,**  
**Technological University Dublin**  
**Dublin, Ireland**

**Phelim Murnion**  
**[Phelim.murnion@gmit.ie](mailto:Phelim.murnion@gmit.ie)**  
**Department of Business,**  
**Galway-Mayo Institute of**  
**Technology,**  
**Galway,**  
**Ireland**

**James Doody**  
**[James.Doody@TUDublin.ie](mailto:James.Doody@TUDublin.ie)**  
**Department of Computing,**  
**Tallaght Campus,**  
**Technological University Dublin**  
**Ireland**

**Pauline Rooney**  
**[Pauline.Rooney@TUDublin.ie](mailto:Pauline.Rooney@TUDublin.ie)**  
**City Campus,**  
**Learning, Teaching and**  
**Technology Centre,**  
**Technological University Dublin,**  
**Ireland.**

**Geraldine Gray**  
**[Geraldine.Gray@TUDublin.ie](mailto:Geraldine.Gray@TUDublin.ie)**  
**School of Informatics and**  
**Engineering,**  
**Blanchardstown Campus,**  
**Technological University Dublin,**  
**Ireland**

## **Abstract**

Learning analytics refers to the measurement, collection, analysis and reporting of data about the progress of learners and the contexts in which learning takes place. In an era of big data, the field of learning analytics has come under increasing focus in higher education, in particular the potential of learning analytics for supporting and/or predicting student success. However, while the potential value of learning data is now well recognised, the skills and proficiencies required to generate, access and interpret such data, and the professional development requirements of staff and students in this regard, are less well understood.

The DALTAÍ project (Developing All Learners Through Analytics Initiative) - a collaborative project from TU Dublin and GMIT - aims to address this gap by (a) evaluating the professional development needs of higher education staff in the area of learning analytics and (b) developing open access professional development resources that scaffold and enable staff to interpret learning analytics outputs. A key element of the project involves determining the opinions, expectations and professional development needs of staff who directly enable and support student learning - particularly in relation to how data can be used to enhance student support and facilitate evidence-based decision-making in higher education. To date, focus groups with academic and professional services staff have been carried out across all four partner campuses to explore these issues: this paper will present preliminary findings thus providing a new insight into the educator's voice on learning analytics in higher education.

## **Keywords**

Learning analytics, Professional development, Evidence-based pedagogy

## **1. Introduction and Motivation**

Learning analytics refers to “the measurement, collection, analysis and reporting of data about the progress of learners and the contexts in which learning takes place” (Siemens & Gasevic, 2012). More specifically, this paper considers learning analytics with respect to the use of student data to understand and enhance teaching and learning, with a view to optimising student success. Every Irish academic institution engages in analytics activities to some extent; data recording student activities is used to varying degrees to inform and improve teaching and learning activities and/or additional student support services (National Forum, 2017).

In 2018, four higher education institutions - the Institutes of Technology in Dublin, Tallaght, and Blanchardstown, who together now form the Technological University Dublin, together with the Galway-Mayo Institute of Technology - collaborated to form project DALTAÍ (Developing all Learners Through Analytics Initiative). This is funded by the National Forum for the Enhancement of Teaching and Learning. The project aims to assess the need for professional development resources and opportunities for staff in the area of learning analytics. The outputs of this project will inform the upskilling of staff, and inform approaches that facilitate students being more aware, and make greater use of, their own data ‘footprint’. In the broader institutional context, it is intended that this will enable more widespread adoption of evidence-based decisions that support student success initiatives. As part of the project, an evidence-based strategy and implementation plan will be developed that addresses the skills gaps and professional development requirements of higher education staff who teach or lead teaching and learning enhancement.

The project aligns with several elements across all five domains in the National Forum’s Professional Development Framework (National Forum, 2016). It supports professional development by evaluating how information and skills development can contribute to an evidenced based culture in teaching and learning in a digital world, and help generate meaningful insights into the quality of student engagement arising from good pedagogical practice. This ultimately supports the student in self-regulating their own learning and supports staff in developing evidence-based student success initiatives.

## **2. Project Approach**

A key element of the DALTAÍ project is to determine the professional development needs of staff who directly enable and support student learning. This includes academic and professional services staff. The professional development needs are being informed by engagement with these

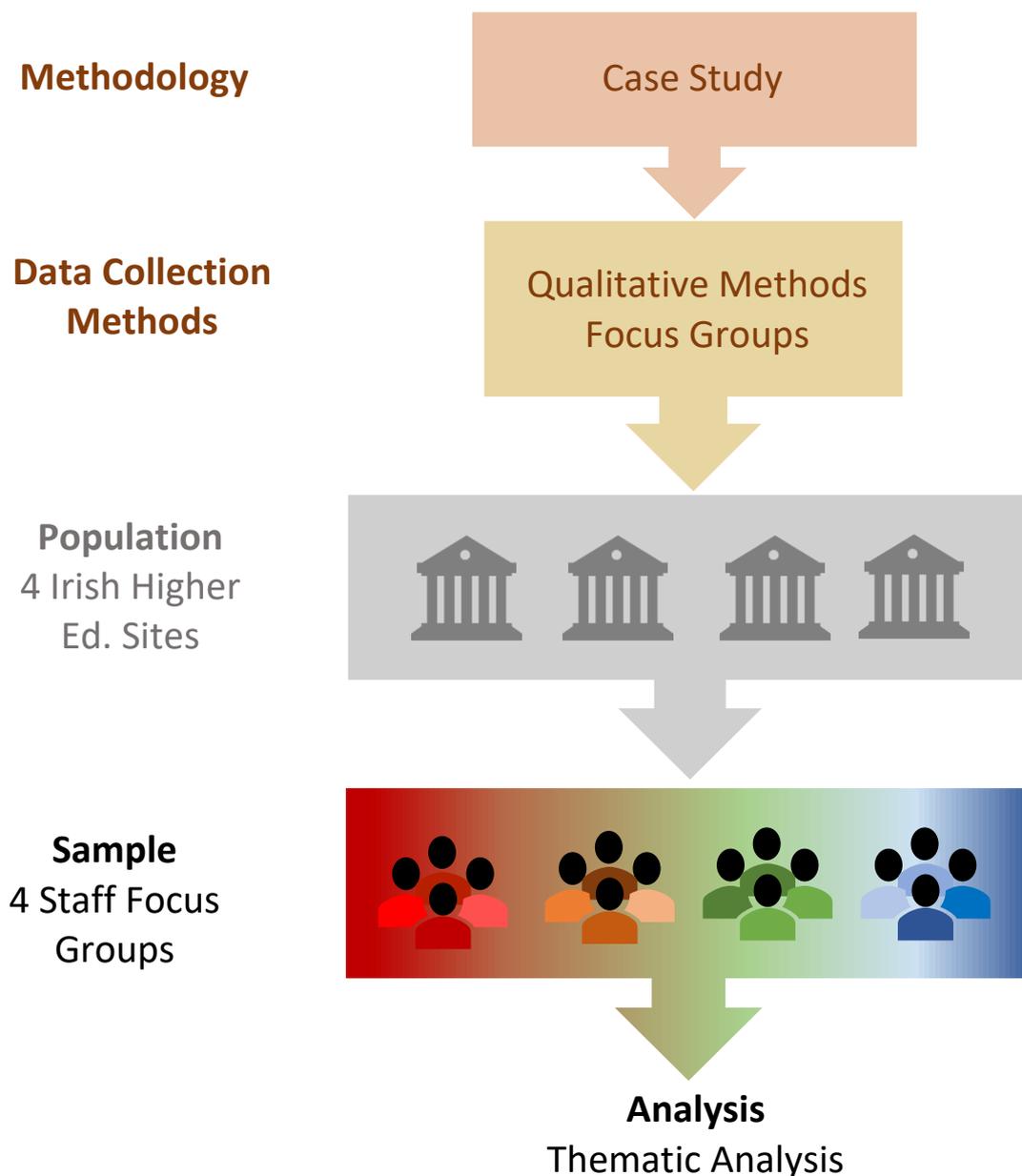
stakeholders on perceived challenges to greater engagement with, and use of, learning data, and the role of professional development in addressing those challenges.

To determine where these gaps lie, focus groups with academic and professional staff have been held to explore the role of professional development resources in increasing digital proficiencies that support greater use of data in decision making in Higher Education. The primary aim of these focus groups was to establish insights into current perceptions and perceived barriers to greater adoption of learning analytics for student success, and development needs that address issues, concerns and queries raised. The focus group method of data collection allows the opinion of a large number of staff to be collected, as well as facilitating a rich discussion where participants may discuss, agree, and disagree with each other's contributions and elaborate on the ideas that have been contributed to the central discussion. This serves to increase the detail and quality of the data collected as well as the reliability of the research (Kitzinger, 1994; Stahl, Tremblay, & LeRouge, 2011).

The larger DALTAÍ project aims include developing initial professional development resources, with the ultimate goal of inspiring professional development opportunities for staff who support learning in Irish higher education. The complete project also features the collection of focus group data from student groups on all four project partners sites. However, It needs to be emphasised that this paper is concerned with preliminary analysis and presentation of the staff data only. Figure 1 illustrates the project design in terms of the data collection from staff in each institution.

### **3. Preliminary Observations**

Four focus groups were conducted for this study, one from each campus. One was a group of professional services staff, comprising representatives from the library, IT services, Quality Assurance, Access and Engagement and the Disability Office. The other three groups were from academic staff from a range of disciplines including business, creative digital media and computing. The opinions of 33 staff members were collected in total. While these data, together with the focus group data from the student groups is to be analysed in detail, a preliminary consideration of the transcripts has yielded some recurrent themes across all sites.



**Figure 1. Project Design-for staff focus groups**

### **3.1 Professional Development Requirements**

This first look at the staff data took a simple thematic approach, with particular attention given to needs and requirements articulated by the groups, aligning with the primary focus of the DALTAÍ project. All academic focus groups articulated a need for further training and development in the use of the Virtual Learning Environment (VLE) to maximise its learning analytic capacities. This included monitoring attendance, using the gradebook and/or monitoring

student engagement with learning materials. In particular, the latter was referred to in the context of informing the lecturer on the effectiveness of course design.

It is notable from the data, even at this early stage, that professional development needs span a range from basic level VLE skills training to more advanced skills. Training in the use and interpretation of student dashboards was also requested.

### **3.2 Uses for Learning Analytics**

Staff discussion on the uses and application of learning analytics also covered a range of perspectives. There was very positive and consistent discussion on the application of learning analytics as a design tool for academic courses. It was considered as potentially useful for course development in the context of the determination of resource, skill and learning outcome gaps; i.e. as a resource for course boards to inform course monitoring and development. Also noted was the value of analytics for summary statistics that facilitate monitoring trends at both programme and module level. The use of analytics to record, monitor and track student attendance did produce some difference of opinion within the focus groups as to its value. Several staff indicated that they had abandoned tracking attendance, others indicated that they felt monitoring attendance had limited use.

### **3.3 Staff Concerns**

The primary concerns articulated by academic staff centred around the limitations of the technology and how much relevant information it could tell us about the students. While the benefits of analytics in terms of scalability and utility in handling large student numbers was acknowledged, there were concerns about how offline activities such as peer-to-peer interactions could be captured and accounted for. There was a clear statement that no decisions on a student intervention should be made using data alone, that data should serve as a trigger for a conversation with a student. The utility of learning analytics was also discussed in terms of who has access to data, when and in what context. Finally, there was a clear and very definite awareness of, and articulated requirement for, information and supports in the context of GDPR, i.e. how to facilitate student access to their data while preserving their individual rights to privacy.

## **4. Conclusions and Future Work**

The outputs of the DALTAÍ project aim to enable the upskilling of staff to manage, use and interpret data in a way that enhances their teaching, learning and assessment practices. It also

aims to enable students be more aware of their own data ‘footprint’. In the broader institutional context, it is intended that this will have the resulting impact of more widespread adoption of considered, evidence-based decisions that support student success initiatives.

The work introduced here has provided a new insight into the educator’s voice on learning analytics and their implementation in higher education. While staff have concerns about how learning analytics initiatives are implemented across their institutions, they also see their potential value in enhancing the student experience and supporting student success more broadly. However, in order to help them realise this potential, staff have clearly identified a range of professional development needs. Taking these educator voices on board, the next stage of the DALTAÍ project will initiate the process of meeting these needs, by developing a range of professional development resources and opportunities for higher education staff across the sector who are at a range of stages in their own professional development.

## References

Kitzinger, J. (1994). The methodology of focus groups: The importance of interaction between research participants. *Sociology of Health & Illness*, 16(1), 103-121.

Stahl, B. C., Tremblay, M. C., & LeRouge, C. M. (2011). Focus groups and critical social IS research: How the choice of method can promote emancipation of respondents and researchers. *European Journal of Information Systems*, 20(4), 378-394.

National Forum for the Enhancement of Teaching and Learning in Higher Education, (2016), National Professional Development Framework for all Staff Who Teach in Higher Education, Last Accessed October 16, 2019, <https://www.teachingandlearning.ie/publication/national-professional-development-framework-for-all-staff-who-teach-in-higher-education/>.

National Forum for the Enhancement of Teaching and Learning in Higher Education, (2017). Using Learning Analytics to Support the Enhancement of Teaching and Learning in Higher Education.

Last Accessed October 14, <https://www.teachingandlearning.ie/publication/using-learning-analytics-to-support-the-enhancement-of-teaching-and-learning-in-higher-education/>.

Siemens, G., & Gasevic, D. (2012). Guest Editorial - Learning and Knowledge Analytics. *Educational Technology & Society*, 15 (3), 1–2