

*Using Attendance Analytics as a Motivational Tool for First-year University Students: The Live Engagement and Attendance Project (LEAP)*

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**Abstract**

Student support professionals (SSPs) play a vital role in monitoring and enhancing students' motivation within higher-education environments, in particular during their transition into higher education. As technological innovations continue to shape the design and delivery of higher-education supports, it is crucial to recognise the reciprocally-beneficial roles that 'interpersonal engagement' and 'digital engagement' can play in SSPs' responses to students' needs. In this paper, we present preliminary findings and reflections from University College Dublin's 'Live Engagement and Attendance Project' (UCD LEAP). UCD LEAP aims to contribute to UCD's student support suite by assessing the feasibility of a Motivation Support Toolkit that combines analytic insights from digital attendance monitoring with motivation-enhancement strategies. This project examines if this blended resource can support student engagement and if it can assist staff in addressing students' ongoing motivational needs, particularly during their transition into higher-level education.

Keywords: Attendance, Motivation, Transition, Student Support Professional, Self-determination Theory, Attendance Monitoring

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## Introduction

Transitioning into higher education presents students with challenging situations, tasks and interactions that can play a vital role in their ongoing personal and academic development. These challenges may express themselves internally, with cognitive, behavioural and emotional components, as well as environmentally, with logistical, organisational and social components (Chipchase et al., 2017; Denny, 2015; Kahu & Nelson, 2018). Students' motivation (Glynn et al., 2005) and their susceptibility to retention issues (Burnett, 2007) are influenced by their ability to respond to these challenges healthily. In this context, motivation is characterised by the arousal and adoption of goal-directed behaviours (Valle et al., 2009). It plays a crucial role in shaping students' engagement with their academic programmes and is "the best predictor of student retention" (Anderson, 2006). It is, therefore, vital that students are provided with "proactive motivational support" (Simpson, 2013), to ensure their success, as well as ensure that higher-education programmes can accomplish their teaching and learning goals. Here, student support professionals (SSPs) can play a pivotal role in monitoring and enhancing students' motivation, particularly given the distinctive relationship that they have with students, as well as the academic, administrative and pastoral dimensions that their role entails.

The higher education landscape within which SSPs work is continually evolving in line with the proliferation of digital and analytic resources (Srinivas, 2018). Technological innovations increasingly shape the design, management, and delivery of higher-education supports and services (Karkouti & Bekele, 2019; Underwood & Anderson, 2018). SSPs utilise both interpersonal engagement and digital engagement in anticipating, identifying, and responding to students' needs. These two distinct forms of engagement exist within a broad continuum of student interactions and experiences, with outcomes that can be mutually reinforcing. Each student's motivation is influenced by unique resources and constraints shaping their lives; by adopting a blended approach to engagement that enables a more holistic understanding of students' circumstances and needs, SSPs can best position themselves to recognise and intervene when students may be demotivated and disengaging.<sup>1</sup>

In this paper, we present preliminary findings from University College Dublin's 'Live Engagement and Attendance Project' (UCD LEAP), which explores the feasibility of a blended approach to student supports, combining analytic insights from real-time physical attendance monitoring with motivation-enhancement strategies in the delivery of student supports within the UCD School of Veterinary Medicine. Drawing on stakeholders' experiences and insights from the literature, we assess the potential contributions of this student support initiative and its scope for future development and application.

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<sup>1</sup> Against this backdrop, UCD's 'Strategy 2015-2020' (2015) aims to provide "Enhanced support to students through improved data systems so that students, faculty, and staff can view the holistic student journey to allow for the appropriate interventions". UCD (2020) also aims to "Integrate student services to ensure a consistent level of high-quality student support... These supports will be bolstered by advanced systems using student data to target and personalise timely interventions".

## **Project Aims and Objectives**

UCD LEAP examines the feasibility of a Motivation Support Toolkit combining digital and interpersonal supports. It explores how insights from this resource can assist staff in anticipating, identifying and responding to difficulties that first-year students may experience during their transition and integration into higher-level education. Two questions guide this project:

- i. What motivation enhancement strategies can student support professionals integrate into their practice to help foster student engagement?
- ii. In what ways can UCD leverage technology to enhance the delivery of student supports, particularly when the concept of student engagement is evolving?

In response to question one, UCD LEAP is developing and evaluating a student engagement model that can advise staff on student motivation, both conceptually and experientially. When delivering interpersonal supports to at-risk students, communications can be contextualised within a “Motivation Engagement Matrix” which can help both parties to navigate discussions on motivation in a systematic and targeted manner. In response to question two, UCD LEAP is implementing and examining the effectiveness, application, and scalability of an interactive and real-time physical attendance management system that enables students to personally “check-in” to classes via their smartphones. These components of the “Motivation Support Toolkit” aim to not only monitor students’ engagement and attendance but to motivate students proactively, and to help ensure that staff are resourced to offer personalised and timely supports.

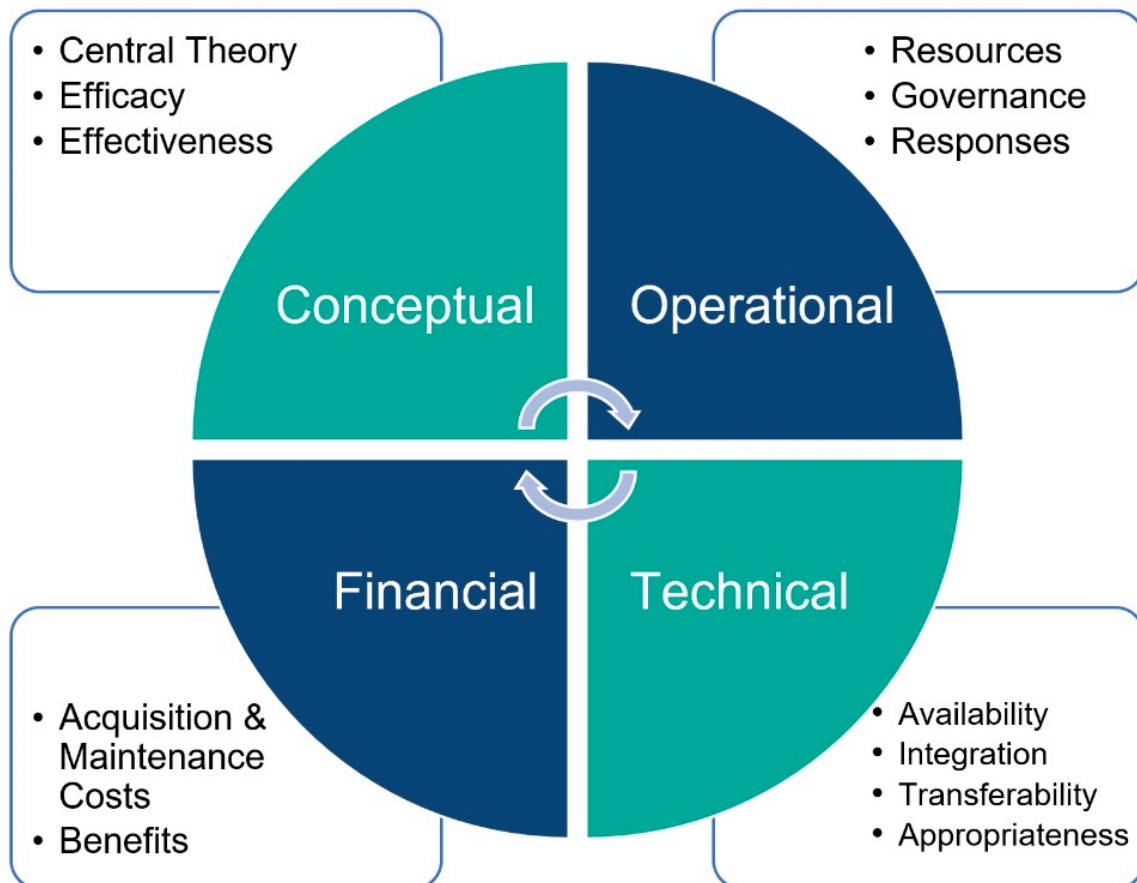
## **Research Framework: A Feasibility Study**

UCD LEAP has approached the research framework as a feasibility study. This framework has provided several benefits including: Enabling greater clarity in creating and benchmarking project goals; ensuring consistency among project components; and facilitating responsiveness to project issues. Feasibility assessment criteria were generated across four domains: Conceptual, Operational, Technical, and Financial.

- i. Conceptual Feasibility examines the project’s theoretical model and assesses the viability of the link between its principles (i.e. a self-deterministic approach to motivation enhancement) and its practical applications (i.e. equipping students and staff with a blended support toolkit). Assessment criteria included examining the central theories underpinning the project, and assessing if these theories were substantive and could contribute towards delivering on the project’s goals. Alongside this, the project’s efficacy in achieving objectives under specific research conditions and its effectiveness in achieving objectives within the broader environment were assessed.
- ii. Operational Feasibility examines the project’s capacity to provide an appropriate solution to the identified need and the ability of stakeholders to contribute to its success collaboratively. Assessment criteria included examining the resources required to implement the solution and the extent to which these could be met. It also entailed examining the research site’s existing protocols, policies, and practices concerning the primary issues under investigation, such as attendance management,

and assessing how the proposed solution will be received by stakeholders within the existing culture.

- iii. Technical Feasibility examines the technical requirements needed to implement and maintain the project's solution. Assessment criteria included examining if the proposed technological solution was available and had been adequately tested; evaluating if the technology's attributes offered a proportionate response to the issue; assessing if it could be integrated into and contribute towards the research site's current systems and practices; and examining if it could be transferable to broader research sites.
- iv. Financial Feasibility examines the costs and benefits incurred in establishing the project's solution and its scalability. Assessment criteria included examining costs in purchasing hardware and software and setting up the system; they also included analysing the costs of system maintenance and management, providing user supports, and ensuring ongoing development.



**Figure 1. Feasibility Study: Assessment Matrix<sup>2</sup>**

<sup>2</sup> This draws on Hall's (2016) TELOS Model, which outlines five key areas of a feasibility study: Technological, Economic, Legal, Organizational, and Scheduling feasibility.

## **Motivation Support Toolkit I: Attendance Management**

The first component of our Motivation Support Toolkit is attendance management. This centres on implementing and examining a digital attendance-management system that enables students to personally ‘check-in’ at classes and track their physical attendance via their smartphones, using Bluetooth technology. With respect to the importance of attendance for students’ success, there is a positive association between student attendance and academic performance within the clinical learning environment (Deane & Murphy, 2013). Capturing attendance is a vital means of identifying students who may be struggling and disengaging (Sclater, 2014), as without attendance monitoring systems absenteeism within the clinical learning environment may otherwise go unnoticed (Deane & Murphy, 2013).

A core project goal is that this interactive and real-time physical attendance tool can help foster the psychosocial needs that underpin students’ motivation. Against this background, and drawing on the central principles of Self-Determination Theory (SDT) (Ryan & Deci, 2002), it aims to foster autonomy by offering students greater ownership over addressing their academic goals; to foster competence by providing students with more transparency in monitoring their attendance requirements and records; and to foster relatedness by creating an accessible staff-student communication pathway. In line with this, for SSPs, it aims to help ensure that they are best-placed to offer personalised and timely supports when diminished student motivation becomes apparent. These supports include, where appropriate, interventions via the Student Advisory Service, UCD’s pastoral support arm.

During its first HEA-funded activity phase, from July 2019-June 2020, UCD LEAP strengthened its partnerships with its technology provider SEAtS Software. Availability of this tool grew significantly from the initial ~90 students who participated in the pre-HEA pilot project during the 2018/2019 academic year, with ~290 students in both Yr1 and Yr2 at the UCD School of Veterinary Medicine being provided with the tool. Bluetooth beacons were installed in >50 campus locations across campus in collaboration with UCD Estates and UCD IT Services. Alongside this, research began on combining ‘check-in’ data with other student engagement metrics such as Virtual Learning Environment (VLE) usage and assessment results, to assess the potential contribution that physical attendance data can make towards constructing a more holistic picture of student engagement.

## **Motivation Support Toolkit II: Motivation Engagement Matrix**

The second component of our Motivation Support Toolkit is interpersonal motivation engagement. This centres on developing a Motivation Engagement Matrix which can guide SSPs as they navigate dialogue with students on their motivation. Given that motivation is “A student tendency to find academic activities meaningful and worthwhile and to try to derive the intended academic benefits from them” (Brophy, 1988), it is an insightful fulcrum upon which conversations that pertain to students’ engagement can balance. This matrix draws on the central principles of SDT, including the argument that motivation underpins people’s psychological health and their capacity to engage in constructive behaviours (Ryan & Deci, 2002). We identify four characteristics of motivation which can offer a theoretical foundation for engagement-enhancement strategies.

Firstly, motivation exists within a continuum of personal regulation, comprising amotivation, external motivation, introjected motivation, identified motivation, and intrinsic motivation (Brooks & Young, 2011; Vansteenkiste et al., 2004). Amotivation is lacking the impetus to formulate or achieve goals within a given context. External motivation is when one's regulation derives from external forces, such as being driven by enhancing positive outcomes or mitigating adverse outcomes. Intrinsic motivation is when behaviours are wholly self-initiated and self-regulated (Hill, 2013), with activities being engaged in for their own sake rather than to serve contingent needs (Ryan & Deci, 2017). SSPs should be mindful of how best to ensure that 'extrinsic' motivators, e.g. assignments, exams, field trips, can be interpreted and internalised by students in a way that is 'intrinsic', i.e. to harness the student-centeredness in students' motivational resources (Trenshaw et al., 2016). For example, when faced with a student who feels socially isolated, SSPs may encourage them to challenge themselves to maintain regular attendance and to take part in extracurricular activities. While the student may, initially, perceive external pressure, the goal is that through positively-reinforcing experiences, they may unlock their intrinsic motivation to socially engage that was otherwise dormant. Finding a way to reframe tasks and obstacles as complementing students' potentially hidden motivations can help initiate, maintain, and enhance their engagement.

Secondly, motivation is contextual, operating across different spheres of influence in a person's life.<sup>3</sup> These spheres of influence include one's situation-specific motivation and reach out to incorporate broader areas of one's life. 'Local' motivation refers to people's drive at a specific moment, channelling efforts into achieving a particular outcome, e.g. homework assignments and class presentations. 'Regional' motivation refers to people's drive to engage with roles and responsibilities across different domains of their life, e.g. being an attentive and punctual student. 'Global' motivation describes a person's holistic disposition and their drive to engage with broader life goals (being rather than doing), e.g. having a deep understanding of one's personal and professional aspirations. An undermined sense of global motivation can be felt as lacking in direction, experiencing apathy towards one's course, or being deeply uncertain of its vocational worth. When engaging with a student who is lacking the drive to perform in their exams, it can be crucial to discuss why this is occurring; it may be due to more than one's 'local' exam-centred motivation being damaged by transient issues such as workload imbalances, but may instead be indicative of a broader sense of discontentment with and estrangement from one's programme. By conceptualising motivation as existing within these different contexts, a greater understanding of the depth of students' demotivation can be achieved.

Thirdly, motivation is multidimensional and underpinned by three inherent psychological needs, namely autonomy, competence, and relatedness (Ryan & Deci, 2017). When a person engages with a task or situation that helps meet these needs, their motivation will correspondingly progress through their continuum of self-regulation (Trenshaw et al., 2016). People's motivation toward personal growth and integrated functioning is catalysed through nurturing from one's social environment (Ryan & Deci, 2002). Autonomy is "self-endorsement of one's behaviour and the accompanying sense of volition or willingness" (Ryan & Deci, 2008). Autonomy can

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<sup>3</sup> This builds on Trenshaw et al.'s (2016) tripartite model of motivation, and Kinsella's (2019) tripartite model of autonomy.

be fostered by creating an environment in which students make use of their deliberative and decisional abilities, and by minimising perceived senses of control and coercion (Niemic & Ryan, 2009; Reeve & Jang, 2006). Competence is the experience of possessing knowledge and skills that are necessary to succeed in one's intended outcomes (Lynch & Salikhova, 2017; Trenshaw et al., 2016). Competence can be fostered by optimally challenging students to use and develop their competencies, such as through flipped classrooms, practical work, and assessments. Relatedness is the experience of fulfilling one's ongoing need for meaningful relationships, and the sense of belonging this imbues (Lynch & Salikhova, 2017; Trenshaw et al., 2016). Relatedness can be fostered by enabling meaningful dialogue between staff and students within the educational environment. SSPs can work with students to identify specific psychosocial needs that students may perceive as lacking and explore ways they can use their personal and environmental resources to proactively address these needs.

Fourthly, motivation is causally significant. It is vitally important in terms of students' ability to generate and accomplish goals and successfully engage with personal and academic tasks. For example, amotivation has been associated with feelings of incompetence and helplessness (Vallerand et al., 1992), which can precipitate disengagement. It is, therefore, crucial to help students be attentive to the status of their motivation, highlighting the role that it can play in influencing the trajectory of their educational experiences.



**Figure 2. Motivation Engagement Matrix**

## Research Design

The research site was the UCD School of Veterinary Medicine. Self-selected participants were drawn from first-year students within Veterinary Medicine (MVB 1), Veterinary Nursing (VNUR 1), and Graduate Entry Veterinary Medicine (GE 1), and students from second-year within Veterinary Medicine (MVB 2). Alongside this, the research team (n=3), encompassing the Student Adviser, Project Manager, and Research Assistant, utilised reflective diaries to record significant events throughout the academic year. The methodology underpinning the research was mixed-method, with an emphasis on qualitative assessment to draw upon participants' experiential insights. For students, the research instruments comprised a mixed-method questionnaire (n=18) conducted in December 2019 and qualitative interviews (phone and written) conducted in April 2020 (n=14). The team adopted reflexive thematic analysis to analyse and interpret the results, framing the researchers' subjectivity as an analytic and interpretive "resource" (Clarke & Braun, 2018).

## Thematic Analysis<sup>4</sup>

### Theme One: Relational Transition

#### *Successful Transition is a Relational Process*

Successful engagement with one's higher-education environment requires building meaningful relationships with the people occupying it, including staff and peers. Students discussed the importance of relationships with their academic staff, peers, and student adviser, each providing distinct motivational enhancement for students. Interpersonal interactions within the classroom environment were valued by students as they offered opportunities for greater engagement with, and insight into, the learning material,

*"Most professors are very available for help and questions, as well as providing support in general, which is great"* (PL-Q, GE1).

Concerning peer groups, both informal and organised social events created a hospitable environment conducive to facilitating social integration, with students highlighting the importance of friendships and having organised events to foster a sense of community,

*"The vet soc organise amazing events and make sure we always have something to look forward to!"* (PK-Q, MBV1).

The Student Adviser's role in students' journey through transition was also noted, particularly the pastoral and academic supports they provided, "I would not be here today without them" (PL-Q, GE1) and "They are a vital asset to motivating and supporting disadvantaged students" (PN-WI, MVB1).

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<sup>4</sup> P=Participant, followed by alphabetically categorised participant; Q=Questionnaire; WI=Written Interview; PI=Phone Interview.



## **Theme Two: Psychosocial Formation**

### *Physical Attendance is Psychosocially Formative*

Physically attending class is holistically developmental, providing challenges and opportunities that are vital to students' personal and professional growth. Engaging in this process requires students to adapt and apply their psychosocial capacities, encompassing cognitive, behavioural, and affective components. Cognitively, students (n=5) discussed the challenges of having to engage in a "different type of learning" (PP-Q, MVB1), and adapt to new ways of studying and assessments,

*"I found it difficult to know how to study for exams as the material and the structure of the course are so different to the leaving cert"* (PK-Q, MVB1).

However, physical attendance was viewed as vital in overcoming this transition, with students noting how lecturers can clarify and elaborate on information that is provided online and can interact with students and address *ad hoc* queries, helping give a fuller understanding of the material. Behaviourally, students (n=5) discussed having to balance the time and energy devoted to different aspects of their lives,

*"Maintaining balance between attending college, studying, having a job and downtime"* (PB-Q, MVB1).

However, they noted that physical attendance helped them to develop the behavioural discipline and necessary skills to achieve this balance. Students (n=6) stated that their academic skills had improved, including "Better time management and organisation" (PB-Q, MVB1) and "UCD has made me a more punctual and organised person" (PS-Q, MVB1). Interpersonally, while students (n=2) noted difficulties in integrating into their new environment, "Hard to make friends" (PG-Q, MVB1), students (n=7) also mentioned how various social skills had been enhanced through their experiences, including "I feel more confident in speaking to people" (PP-Q, MVB) and "Ability to work as a team has greatly improved" (PA-Q, VNUR1).

## **Theme Three: Multidimensional Motivation**

### *Motivation to Engage in Education is Multidimensional*

For many students, their inherent psychological needs for autonomy, competence, and relatedness underpinned their motivation to participate in the process of education. There is a broad spectrum of different motivators across cohorts and within each individual, and at times when students may be at risk of disengagement, it is essential to dialogue with them to uncover any potential motivations that they can draw on to help reengage with the higher-education environment.

There were students whose motivation to attend classes was born from their inherent interest in the subject (n=5), noting:

*"I enjoy the subject that I am doing and hence find the lecture interesting"* (PG-Q, MVB1).

Students responded well to aspects of the course that helped to clarify and consolidate their initial motives for enrolment, noting:

*“We’re so lucky to have gotten where we are...I know from myself and a lot of my peers that we know what we do, and that’s why we chose it...so that’s motivation in itself”* (PD-PI, VNUR1).

They were motivated by the sense of being able to foster their occupational identity. More than just ‘doing’ a course in veterinary medicine, they were very much ‘becoming’ a vet,

*“I also feel I developing into the person I want to be as a vet with each week that passes by”* (PS-Q, MVB1).

Students (n=9) also referenced the cognitive merits of physical attendance, with (n=5) stating that attendance at classes helped to enhance their understanding of the module content,

*“I understand the subjects much better if I actually see it taught to me and then I go back over myself, as opposed to kind of reading it myself, which is, I’ve noticed now, kind of a lot since the fact that we have to do online classes”* (PB-PI, VNUR1).

Concerning relatedness, interactive learning was considered superior to autodidactic approaches:

*“You actually pick up things that you never would have picked up from just reading the material, and then actually being there to interact with the prof and interact with your peers, you remember it better, because you’re remembering it in different ways”* (PC-PI, GE1).

Alongside this, a sense of being part of a community of individuals with shared goals and aspirations was a motivator for students.

#### **Theme Four: Institutional Embeddedness**

##### *Institutional Embeddedness Determines the Operational Feasibility of Technological Innovations*

The feasibility of technological innovations is determined by institutions’ ability to embed them in their existing infrastructure, systems, and practices. This process is complex and challenging, requiring stakeholders to be mindful of the technological and human resources necessary to embed the innovations as well as an awareness of the opportunities and obstacles that it may bring. In this context, four issues emerged: Technological functioning; timetable consistency; academic buy-in; and accurate reporting. Concerning technological functioning, students (n=6) noted that:

*“Sometimes the service in the classrooms are terrible and it won’t let me check in”* (PK-WI, GE1)

and

*“A lot of us don’t have the latest phone either, so it can be slow to run or require us to choose between apps”* (PN-WI, MVB 1).

Achieving embeddedness entails ensuring that students' 'check-in' process is as straightforward and seamless as possible. Regarding timetable consistency, students (n=7) mentioned difficulties such as

*“When changes to the timetable occur that aren't reflected in the app”* (PG-WI, MVB1).

Embeddedness, thus, also entails ensuring that institutional timetable information is accurately represented within students' app timetables and that changes are implemented in a timely fashion. As regards academic buy-in, it is crucial to ensure consistency among academics in their expectations of students' use of the app and that they are aware of the significance of checking-in to class. Concerning accurate reporting, students (n=8) mentioned issues such as “Does not reflect my accurate record” (PM-WI, GE1). Embeddedness, therefore, requires ensuring that the information reflected in a student's 'check-in' record accurately represents the information provided in their attendance record.

### **Theme Five: Trust in Technology**

#### *Trust Determines Receptivity to Technological Innovations*

Trust in UCD LEAP's technological solution and its ability to deliver shared goals will influence stakeholders' willingness to use it habitually. While the initial levels of receptivity to the technology from students were very high, the gap between adoption and integration can be challenging to bridge if its potential value-add to their lives is not readily acknowledged and internalised. Trust will help overcome cognitive-behavioural impediments to regular usage, such as forgetting to check-in (n=11):

*“I arrive on time and I am already thinking of who I want to say hi to and arranging my materials. I only think of signing in when it's too late”* (PN-WI, MVB1),

and not carrying one's phone (n=5):

*“It's very reliant on you being on your phone and having your phone on and charged, every day if you come in. And some people just kind of forget to do that”* (PE-PI, MVB2).

### **Reflections of Research Team**

For the Student Adviser, several findings emerged. By using the digital attendance monitoring tool, their access to timely information on potential student disengagement improved. Importantly, however, there were limited insights for students who may be attending but are nevertheless struggling. Up-to-date 'check-in' analytics facilitated early student support interventions via standardised emails and personalised interactions which could be readily integrated into day-to-day workloads. Understanding student engagement and motivation is a qualitative endeavour that can be enhanced by using quantitative tools. However, quantitative tools alone may not provide a sufficiently thorough understanding of students' experiences and needs. Therefore, using this attendance-monitoring tool as a medium through which to initiate and maintain student-staff dialogue remains a priority. The Motivation Engagement Matrix provides insights that can underpin targeted communications. The

goal is to develop this reflective instrument into an interactive and directive resource that can guide adviser-student interactions through, for example, guided question-and-response templates.

Students value the interpersonal underpinnings of student supports, and this should remain the central component in developing and delivering attendance-monitoring tools. Automated emails are an efficient way to maintain contact and visibility, and accurate attendance data is vital to ensure receptivity. Students' reactions to the principle of attendance tracking were mixed. Some valued the presence of support for students who may be disengaging: "For the pros it's good to know who's there and who's interacting and who you might need to help" (PC-PI, GE1); others felt that it runs counter to the ethos of independence underpinning higher-education education: "It is completely the student's business whether they want to go to lectures" (PF-WI, MVB2). In this context, ongoing attentiveness to ensuring robust, practical implementation of the project will facilitate further receptivity to the self-deterministic principles underpinning it. It is, as yet, difficult to determine the overall impact that this initiative has had on student engagement, and it is envisaged that these insights will become more apparent as the technology continues to become embedded within the environment.

### **Recommendations and Future Directions**

Research findings from the 2019/20 academic year provide a baseline of information regarding the implementation of attendance-management systems and their efficacy in facilitating real-time blended student supports. From these findings, the research team has formulated several priorities and recommendations.

Firstly, it is an operational imperative that usage requirements for the attendance-management system, and aligned data administration, conform with academic regulations. This facilitates more confidence in using the system and minimises erroneous analytics input. Similarly, clarity needs to be provided for both students and staff on the utility of the technology in enabling both student engagement and staff's ability to provide engagement supports. Optimal contexts for system usage and integration with existing support networks need to be identified, as well as appropriate student cohorts and settings for participation.

From a technical standpoint, measures improving system accuracy should continue to be researched and installed. These measures include ensuring that technological issues are resolved quickly, student timetable changes are updated in real time, and attendance reports are correct, allowing analytics to accurately stratify and direct students to relevant resources in the broader support framework. The research team will also continue working collaboratively with the technology provider on developing application improvements based on student and staff feedback, such as the creation of an automatic 'check-in' facility.

Conceptual insights derived from research activity can be improved by conducting additional in-class research, this will facilitate higher response rates and allow for data to be more generalisable. Using primary research data from the first year of the project will allow for longitudinal analysis and iterative improvements to student support intervention activity for the upcoming academic year. These improvements

can be further facilitated by combining attendance insights with broader engagement metrics. Likewise, ensuring that the Student Engagement Matrix is a workable tool for SSPs requires ongoing research on existing motivational enhancement tools that exist in the literature, such as within Motivational Interviewing.

The future direction of UCD LEAP project activity will be primarily focused on developing and embedding the student support intervention framework. Regarding system development, the continued impact of Covid-19 and associated campus closures are driving an increase in the online delivery of teaching and learning. It is currently unknown whether online delivery is a short-term response or whether it is the beginning of a paradigm shift regarding dominant methods of instruction in higher education. Consequently, a key focus will be the incorporation of additional VLE engagement data, allowing for insights into which analytic metrics can be transferred to the VLE space. Combining different engagement metrics can also prove helpful in painting a more dynamic and nuanced picture of students' experiences. These metrics can feed into the provision of supports, helping to improve the overall intervention process and determine which learning gaps can only be mitigated by face-to-face instruction. In order to maximise the impact of future project activity in the above areas, further sectoral dissemination of research outcomes is necessary. Coupled with increased collaboration with Dublin City University<sup>5</sup>, a broader suite of initiatives and material examining digital and interpersonal supports will be explored in future publications.

## **Conclusion**

In this paper, we presented preliminary findings and reflections from UCD LEAP's research activities during the 2019/2020 academic year. The principle of developing a Motivation Support Toolkit encompassing interpersonal and digital components remains robust and merits further research, in particular given the increased digitisation of teaching and learning within the higher-education environment. The research will continue to assess this tool's contributions towards supplementing student supports and fostering their transition and integration into higher-education, and its capacity for cross-campus scalability and transferability. In this context, it is essential to continually address and refine themes centring on this project's feasibility, which will be vital in providing a robust basis upon which to build institutional initiatives that draw on the project outcomes.

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