Conceptualising Student Engagement as a Theoretical Framework for Innovative Higher Education Practices – A Literature Review.

Connie O'Regan, iD

Natalie Walsh, Tony Hall, iD
Grace Mannion and Michelle Millar iD

University of Galway, connie.oregan@nuigalway.ie

Abstract.

Funded by the Irish Government (2020-2025), Designing Futures (DF) is a flagship university programme which provides a range of campus-based initiatives with the aim of supporting students to design their own personalised learning journey, equipping them for both their future lives and careers. It is being implemented and evaluated using an iterative process according to the principles of Educational Design Research (McKenney and Reeves, 2018) and Developmental Evaluation (Patton, 2011). This paper reports on a systematic review undertaken to scope out relevant theoretical frameworks for the project, in particular those that promote student engagement for all and enhance their belonging on campus. Informed by a realist approach, the research team worked from an initial set of 2031 articles and to a final set of 54 texts. The review outcomes are described according to three research questions, the goodness of fit of "*student engagement*" as a theoretical framework in this context; practices that foster effective student engagement; and research methodologies commonly deployed to investigate student engagement. Finally, a working theoretical model for the Designing Futures project is proposed based on the literature reviewed. This utility of this model will be tested and refined as data are collected over the life cycle of the project.

Keywords: Belonging; Higher Education; Innovative Approaches; Student Engagement; Theoretical Framework.

1.   Introduction.

The University of Galway's 'Designing Futures' programme, (DF) is a new educational programme that will prepare students to deal with today's complexity and uncertainty, and the future world of work. This programme has been through the Human Capital Initiative, Pillar 3

by Ireland's Higher Education Authority (Higher Education Authority, 2020). It aims over a five-year period to enhance and develop the provision of a range of student engagement initiatives which focus on supporting students to design their own personalised learning journey, equipping them for both their future lives and careers. Starting with a systematic literature review, the project team sought to to identify underlying project theory, track project workflows and collate stakeholder feedback to refine and amend the approach iteratively as the project is implemented. In this way, it will contribute to the embedding and enhancement of the project outcomes. In undertaking a systematic literature review in this context, with a focus on trying to identify what works, for whom, in what circumstances, a realistic review methodology was the best methodological fit. According to Pawson a realist literature review seeks "*to articulate underlying programme theories and then to interrogate the existing evidence to find out whether and where these theories are pertinent and productive*" (2006, p.76). This paper details the conduct of this realist review of the relevant literature. Firstly, it will report on the methodology used to search for and appraise the evidence. Next, it will extract and synthesise the findings, setting out the evidence according to each research question. The final section of the paper sets out how this work has framed the development of the theoretical model for Designing Futures.

2.   Outline of Search Methodology.

Designing Futures is a comprehensive package of supports comprising of a range of inputs to enhance University of Galway student outcomes. The three identifiable project rationales are:

•   To enhance the outcomes for students not just related to their career options but also in terms of positive life outcomes.

•   To provide students with a range of opportunities to advance their transversal skill development.

•   To refocus the university-enterprise relationship away from a transactional approach to one of partnership as a way of embedding design-led enterprise experience and knowledge within the university.

An initial scoping review of the literature was undertaken to identify a primary area of literature that would provide a goodness of fit in terms of underlying frameworks to incorporate the various project elements. This process led to the identification of a core set of articles on the topic of

Student Engagement (Groccia, 2018; Kahu 2013; Krause, 2005; Trowler, 2010; Zepke, 2015). The selection of student engagement was on the basis that it was a sufficiently theorised and established term in which to locate the various project aims within DF. A stakeholder group of key project staff reviewed these core texts and agreed that these were a suitable basis for conducting the more detailed review. Through engaging in a consultative process with the DF team, key research questions were identified to underpin the review. These were agreed as follows:

1. Can student engagement theory provide a coherent theoretical framework to underpin the DF initiatives?

2. What is the evidence base for effective Higher Education (HE) practices to foster student belonging and engagement?

3. What innovative approaches can be used to research these practices in HE Settings?

Based on a review of these research questions, the following keywords were selected "*higher education*" "*student*" "*engagement*" "*institution**" "*tertiary education*" "*university*" "*learning*". The search process excluded "*secondary*"; "*k-12*" "*primary school*" and "*high school*". The date range was 2011 to the present. 2011 was selected as a cut-off date with reference to Trowler's (2010) systematic review of over 1,000 articles on student engagement. This realist review was to track the focus of the field since then. Only articles published in the top 25% rated education journals are included. This was a measure to focus on the latest and leading, peer-reviewed theorists in the field.

Table 1 provides an outline of the process followed by the team to identify the final set of texts to be included in this review across the three phases of identification, screening and analysis.

<u>**Table 1: Realist Review Process – Designing Futures.**</u>

Identification of studies via databases		
Identification	Records identified Databases (n=7): **2031**	Duplicate records removed before screening (**1471** removed)
Screening	Abstracts screened by team: **560**	Team reviewed abstracts and decided to include or exclude based on relevance to research questions (**422** removed)
	Full text reviewed by team: **138**	Team reviewed the full text and decided to include or exclude based on relevance to research questions (**87** removed)
Analysis	Data Extraction Sheet: **(51)**	Team selected 33 articles (**18** removed)
	Final Texts from Search Results: **(33)** Additional Searches: **(21)**	Total Included in Review: **54**

The team were guided throughout by the specific research question and balanced the decision to include or exclude a study based on its added value to advance the evidence base for each area of focus. In keeping with the realist approach, the team did not privilege one research approach but judged each paper on its merits in meeting its research objectives within its methodological stance (Pawson, 2006). Furthermore, when the final set of texts were identified, an additional follow up search took place to locate texts that were listed in the reference lists of included texts. As such, 21 additional texts were included, based on their ability to advance the evidence base under the relevant research questions. The synthesis of the evidence base is described below according to each research question, starting with the question of whether student engagement theory provide a coherent theoretical framework to underpin the DF initiatives.

2.1 Student Engagement as a Theoretical Base for DF.

This section of our review provides a narrative analysis of the key student engagement theorists in order to set out how they might inform the theoretical underpinnings of the DF project. Of the total number of 54 texts in our review, 22 were analysed to explore the theoretical base further. The review begins with a focus on the origins of this focus on student engagement in the HE sector.

Astin states that "*even a casual reading of the extensive literature on student development in HE can create confusion and perplexity*" (1984, p. 518). His paper on student involvement is often cited as one of the founding approaches for student engagement in HE. Astin's theory of student involvement was proposed to support efforts in HE to design effective learning environments. His focus on how students spend their time as an indicator of their investment in their course remains to this day an influential focus in terms of how student engagement is conceptualised (Kuh, 2009, ISSE, 2021). When Tight (2020) undertook a systematic review to track the development of the student engagement literature, he located its starting point in Austin's student involvement theory. By comparing the popularity of both "*student retention*" and "*student engagement*", Tight (2020) demonstrated that student engagement has garnered greater attention than student retention. He suggests that this shift may be due to a transfer of responsibility for funding HE from the state to the student and a correlating transfer of responsibility for engagement to the higher education institution (HEI). Tight (2020) concludes that within the student engagement literature, there is a lack of focus on the lived experience of the student because the research lens often only considers the student-institution interaction.

Bowden,Tickle& Nauman (2021) explored four domains that are central to theorising student engagement. Firstly, there is a behavioural focus which is based on what can be observed in relation to a student's performance, participation in campus activity and time invested in their third level experience. Secondly, there are emotional aspects focused on how to develop an affective connection to the college experience, which Bowden et al. (2021) note, is under researched. Thirdly, there are the social aspects, based on how the student builds connections across peers and staff on campus. The final cognitive domain relates to university education as an instrument in developing a student's higher order thinking.

Trowler's (2010) comprehensive systematic review of over 1000 articles, also set out the varying behavioural, social, emotional focus of student engagement research, noting the influence that US behavioural research national surveys of the student population have on the field. This review also noted that while student engagement is associated with positive outcomes, it can be a mixed or negative experience for others. Crucially, in terms of locating the DF initiative, Trowler (2010) differentiates between the traditional, progressive, social, enterprise ideological perspectives on teaching and their implications for student engagement. Trowler notes that the progressivism perspective views teaching as "*about developing students' minds so they can better appreciate the world, about making them autonomous. Students need to be engaged in, and with, learning – both in and out of the classroom*" (2010, p. 40). Groccia (2018) provides a model to conceptualise student engagement as multi-dimensional, focusing on the student's behaviour, emotional and cognitive engagement which he terms as doing, feeling and thinking. These are then played out across contexts in the institution that connects the student to their teachers, peers, the community, to teaching and research.   Xerri, Radford & Shacklock(2018) focused on the contribution of social support theory in facilitating positive student staff relationships, strong peer to peer connections and developing the student's sense of purpose within HE. Kahn (2017) focuses on student agency and the value of social relations, where students get involved in both curricular, co-curricular and research opportunities. By focusing on student engagement through "*the agency of learners within educational settings, supported as this is by the social relations maintained by learners*" (2017, p. 53), Kahn believes students can be supported to flourish.

Zepke (2015) proposes a matrix of sensitising concepts, which he applies to what he terms the mainstream student engagement research and how this might be extended further. His sensitizing concepts are learning agency, learning success, learning well-being, and learning for social justice. He argued for relocating student engagement into a socio-cultural framework

to enhance student agency and active citizenship. Zepke's work provides a useful device for linking the conceptualisation of student engagement to a wider agenda of student voice and citizenship. However, it should also be noted that Zepke (2021) argues that there is a lack of agreement on a unified definition of the term student engagement. He proposed two models that provide further frameworks for DF. One model allows for consideration of why some individuals "*engage*" during HE and some do not. In the second, he provides a structural framework to locate a theoretical position on student engagement, whether at micro or macro level, and whether according to an objective or subjective model. In presenting his framework, Zepke (2021) references the work of Kahu (2013) and Kahu and Nelson (2018), describing their integrated student engagement model, which is discussed below.

Kahu (2013) reviews existing theoretical models of student engagement. Her main critique of the behavioural approach, based on the widely used survey research of this approach is that it reports on both student and the university outcomes. While the cognitive approach focuses on the student's investment in learning, she contests this approach to student engagement is under theorised and under researched. Finally, Kahu (2013) outlines that while socio-cultural perspectives provide a broader social context for the student perspective, this is not sufficient on its own as an explanatory device for student engagement. Instead, Kahu (2013) develops a model for understanding student engagement that combines the behaviour, cognitive and socio-cultural approaches.

Kahu and Nelson (2018) then strengthened this model to use the central location of the educational interface as the site where the student can actively engage. In this model, student engagement is a result of complex interactions across the students' academic self-efficacy (perceptions of their capabilities), emotions (appraisal of the situation), belonging (connection to institution, discipline, people) and wellbeing (life load, stress). They note that in theorising student engagement in this way, it is not seen as deficit driven and student agency is central. More recent work by Trowler et al. (2022) has extended Kahu and Nelson's (2018) model further in a number of ways that are particularly applicable to the DF project. Firstly, they emphasise that the student's experience through HE is more dynamic than the linear relationships in this type of model. Secondly, they note that the term "*engagement interface*" is more useful than "*educational interface*" for the site of student/university interaction, as the student will have a range of other educational experiences outside of the formal education site. Finally, they recommend an expansion from the accepted "*triggers*" of student's engagement beyond academic self-efficacy, emotions, belonging and wellbeing to include motivation, resilience and

reflexivity as "*pathways to engagement*" (2022, 768). This more dynamic and student-led framing of engagement in this context fits particularly well with the focus within DF on supporting students on a personalised journey through their time in HE.

This section has considered the goodness of fit of student engagement theory as coherent theoretical framework to underpin the DF initiatives. Central to the work of the various theorists and models set out here is a recognition that student's success or otherwise in HE both academically and socially is the result of a complex interplay between their prior circumstances, their personal resources and resourcefulness, and the mechanics of educational provision at the institution. Kahu and Nelson's (2018) model and its development by Trowler et al. (2022) in particular offer a robust theoretical framework from which to explore the implementation of the DF initiatives as they aim to deliver a range of positive supports to students through a more personalised and responsive journey through HE.

2.2 Effective HE Practices to Foster Student Engagement.

Having considered the goodness of fit of the constructs of student engagement for DF, this section considers the evidence base for effective practices. In exploring this research question, the team were interested in identifying previous research on initiatives that promote student engagement. In so doing, the team wanted to ensure that the project is informed by current thinking on best practice to foster engagement in HE settings. Trowler (2010) described three distinct foci within the student engagement literature. These are student learning, student identity and organisational structure and process. In keeping with its focus on the individual student journey, the DF team focused in this review on initiatives in the student learning and identity arenas.   However, within an Irish context, the "*National Student Engagement Programme*" has provided a range of resources and guidance on the development of structures and process within institutions that foster student engagement in governance and advocacy.[1]

Located within the lens of student learning and identity, Zepke and Leach (2010) undertook a synthesis of 93 articles across 10 countries on student engagement. Their set of 10 proposals for action are presented here under the relevant theme. There is also considerable overlap between these 10 proposals and the seven effective practices for HE as recommended by Chickering and Gamson (1987). While these three articles focused on underlying principles,

---

[1] See for further information – https://studentengagement.ie/

Kuh's (2008) High Impact Practices are well established in the literature and analysis of US National Survey data on student engagement. Table 2 below summarises each of these core texts, illustrates where they overlap according to theme and includes the additional texts included in the review in the relevant section.

<u>**Table 2: Themes within Evidence base for Effective Higher Education Practices.**</u>

Theme	Practice	Source
High Expectations for students	Enhance Student Self Belief	Zepke & Leach (2010)
	Enable students to become active citizens	Zepke & Leach (2010)
	Enable students to develop their social and cultural capital	Zepke & Leach (2010), Tymon (2013)
	Communicate high expectations	Chickering & Gamson (1987)
	Ensure expectations are explicit and responsive	Krause (2005)
Active Learning	Enable students to work autonomously, enjoy learning relationships with others and feel they are competent to achieve their own objectives	Zepke & Leach (2010)
	Emphasizes time on task	Chickering & Gamson (1987)
	Encourage active learning	Chickering & Gamson (1987)
	Blogging as a reflective practice tool	Morris, Christie & Barber (2019)
Provision of Education	Recognise that learning opportunities are central to engagement	Zepke & Leach (2010)
	Encourage contact between students and staff	Chickering & Gamson (1987)
	Give prompt feedback	Chickering & Gamson (1987)
	Value classwork and high standards	Krause (2005)
	Use assessment to share the student experiences and encourage engagement	Krause (2005)
	Highlight the importance of university staff in leading student attainment initiatives with community partners	Karasik (2020)
Collaboration	Create learning that is active, collaborative and fosters learning relationships	Zepke & Leach (2010)
	Develop reciprocity and cooperation among students	Chickering & Gamson (1987)
	Foster social connections	Krause (2005)
Complexity	Adapt to changing student expectations	Zepke & Leach (2010)
	Recognise the complex nature of engagement	Krause (2005)
Diversity	Learning opportunities should explore diverse and global perspectives	Kuh (2008)
	Ensure institutional cultures are welcoming to students from diverse backgrounds	Zepke & Leach (2010)
	Respect diverse talents and ways of learning	Chickering & Gamson (1987)
	Monitor and respond to demographic subgroup	Krause (2005)

	differences and their impact on engagement	
Student Supports	Invest in a variety of support services	Zepke & Leach (2010)
	Coach for Student Success	Nelson, Quinn, Marrington, & Clarke(2012)
	Provide an alternative reality game for Orientation	Elsom, Westacott, Stieler-Hunt, Glencross, & Rutter(2021)
	Acknowledge the challenges	Krause (2005)
	Provide targeted self-management strategies	Krause (2005)
	Manage Online learning experiences with care	Krause (2005)
Experiences/ Initiatives	Create educational experiences for students that are challenging, enriching and extend their academic abilities	Zepke & Leach (2010)
	Create and maintain a stimulating intellectual environment	Krause (2005)
	Provide seminars to enhance psychological capital	Gomes da Costa, Pinto,., Martins, & Vieira, (2021)
	Provide joint enterprise and staff module delivery	Hanna et al. (2015)
	Create University Awards for Extra & Co-curricular that promote reflective practice	Thompson, Clark, Walker, & Whyatt(2013)
	Highlight First year seminars/experiences	Kuh (2008)
	Provide common intellectual experiences	Kuh (2008)
	Create learning communities	Kuh (2008)
	Provide intensive writing courses	Kuh (2008)
	Create collaborative assignments and projects	Kuh (2008)
	Provide opportunities for Service/Community based learning	Kuh (2008), Trolian & Jach (2020)
	Provide Internships/Work based Learning/Field based learning	Kuh (2008), deVillers Scheepers, Barnes, , Clements & Stubbs, I (2018), Lloyd et al. (2015),Ng, Chan, Wut, Lo, & Szeto, (2021)
	Provide Capstone course and projects	Kuh (2008)
	Create vertically integrated projects	Strachen, Marshall, Murray, Coyle, &Sonnenberg-Klein(2019) Sonnenberg Klein, Abler, Coyle & Ai, (2017) Coyle, Allebach, & Krueger, (2006)
	Consider virtual Reality Learning Experiences	Makransky & Lau (2018)

Initiatives are set out according to the 8 themes which emerged in the analysis of the articles. Each theme is discussed in turn below.

1.   High Expectations for Students: These practices focus on the assumption that students will succeed and flourish. Effective HE practices are those that seek to foster and enable that success. These practices highlight student identity development and agency in their time in HE.

2.   Active Learning: These action points have a common foundation in a social constructionist pedagogy viewing the student as the central agent in their own learning. Student engagement literature in the main subscribes to an active and central role for the student in their journey through HE.

3.   Provision of Education: While the approach to learning is social constructionist, the importance of providing active and engaging learning opportunities is a strong theme across these best practices.

4.   Collaboration: Social relations and specifically those between peers are an important aspect of student engagement. All theorists in the framework specify the importance of peer-to-peer collaboration in fostering student engagement.

5.   Complexity: It is important to include a reference to the contested and complex nature of what is meant by student engagement. Any initiative that seeks to address student engagement will need to allow for this complexity and focus on tracking "*what forms of engagement work best under what circumstances for different groups of students*" (Kuh, 2009, 15).

6.   Diversity: As more students are attending college, there is an increase in the diverse needs and experiences of both the undergraduate and postgraduate cohorts. Initiatives that provide alternative admissions pathways have also resulted in increased diversification of the student population. These changes together with the increased participation of international students require that campus communities are welcoming and inclusive for all students.

7.   Student Supports: The role of student supports is heightened given increasingly diverse student populations. These services are required to ensure that there are active and responsive systems providing scaffolding and supports for the student on their educational journey, as and when needed.

8.   Experiences and Initiatives: This is the largest group of recommendations in this review of best practice to enhance student engagement. Key among these for the DF team are

those that correlate closely to the various project initiatives proposed. These are the vertically integrated projects, virtual reality learning, service/community-based learning, university awards, collaborative experiences and common intellectual experiences.

This realist review of the 20 core texts focusing on initiatives has provided an overarching set of themes that can be used to track the implementation of the various DF project initiatives. In addition, the framework above has collated principles for effective practice, research informed high impact practices and exemplars of initiatives used to foster student engagement in a range of HE settings. This framework will provide a useful heuristic for tracking the implementation of DF and reflecting on feedback from key stakeholders throughout the project lifecycle. Having considered both the theory and initiative research questions, attention is now turned to the final review question on the specific research methodologies used to track levels of student engagement.

2.3 Research Approaches to Student Engagement in HE.

As noted earlier, many of the theorists and research outputs discussed in this review have emerged from the well-established institutional student survey research in this field. Kuh (2009) provides a background to the development of this survey. He traces this method of studying student engagement as directly linked to research on "*time on task*" from the 1930s. The highly influential National Survey of Student Experience (NSSE) was first undertaken in 1999. It focuses on gathering feedback from a national representative sample of students attending 4-year colleges in the United States. A similar survey instrument is used for the US Community College sector (CSSE), which offers a 2-year programme of study. This methodological framework has been highly influential and widely adapted internationally. The Irish Student Survey uses the same core framework and is carried out annually, across HEIs in Ireland by first-year and final-year students (Clynes, Sheridan & Frazer, 2020; ISSE, 2021).

There are many examples across the US student engagement literature of how this data source can be analysed further. Fosnacht et al. (2018) used the data to identify different typologies of engagement type across 3000+ first-year students. Using time spent on tasks as a key organiser in the data, four engagement patterns were identified. These were students with high involvement (involved), students with balanced involvement (balanced), students with higher social involvement (partiers) and students who had caring responsibilities (parents).   The researchers noted the most of the first-year group belonged in the balanced group, spending

up to 39 hours engaged across curricular, co-curricular and social activities on campus. However, in a US context, where most students in 1st year live on campus, the authors found this amount of time was lower than expected and they recommended further research regarding how these students are spending their time. Leach (2016) undertook follow up analysis on the Australasian Survey of Student Engagement, (AUSSE); also modelled on the NSSE. She found that across the data sample, students from different disciplines had different scoring patterns, which suggests that there may be disciplinary differences in how students interpret the data. As a result, Leach (2016) concludes that this type of survey data may be most useful at disciplinary level rather than interpreting the findings at institutional level. In other words, universities may benefit more from analysing these types of survey data at the level of the individual discipline rather than at institutional level given the likelihood that there are inter-disciplinary differences in how engagement concepts are applied and understood by students in different disciplines.

Several open-ended items are also included on the survey instruments. Zaitseva, Milsom & Stewart(2013) undertook a follow up analysis of these data using concept maps to further explore the feedback from students. They were able to track changes in student concerns across the various years of study. They found that first year students were more interested in affective goals, learning to make social connections at college, second year students focused more on learning goals, while third year students were more likely to discuss issues related to their course outcome and next steps.

While the NSSE survey is very influential and internationally applied, several alternative survey methodologies have also been developed. Webb and Cotton (2019) described how they used an alternative approach to track changes in levels of engagement over time. Using the DREEM survey, it was possible to identify a drop in levels of engagement among second years. Korhorron (2021) used a different survey instrument to track first year engagement levels across a five-year period from 2013-2018. Based on the data gained from this NEXUS survey instrument, it was possible to identify that roughly 40% of students were academically engaged, 40% of students were engaged but less so and 20% of students were only loosely engaged. A further finding was that freshmen/first years were more likely to prioritise social connections with peers over learning and their engagement could be improved by setting out learning targets more clearly.

Although survey-based research is highly influential in the study of student engagement, there is also evidence of alternative visual narrative and qualitative methodologies being deployed.

Kahu and Picton (2020) asked students to demonstrate using photographs their experience of transitioning to university. The rationale for their approach was to try and overcome the limitations in survey research in this field which does not often '*capture the student's full lived experience*'. Students were invited to select a photo from a series of options to best illustrate their experiences. Kahu and Picton (2020) found that students focused on three themes, their life, university and learning. There was a sense that some students experience the transition as a roller-coaster and that further support could perhaps help to smooth out this experience. A similar set of findings emerged from a study by Everett (2017) who asked first year students participating in a first-year induction seminar to develop a visual presentation describing their experience of the transition to college. The results indicate that most factors affecting the transition were related to personal and social needs. Everett (2015) concludes that the process of undertaking a reflection on the experience was particularly useful for the participants. In researching community engagement, Renwick,Selkrig, Manathunga and Keamy (2020) used a novel approach by asking staff to forward postcards with an image and a short sentence to describe what community engagement meant to them. They then asked a group of participants to join them as co-researchers to analyse the data and subsequently developed a shared understanding of staff's definition of the concepts in question.

A final research methodology that emerged was Balan,Maritz and MacKinley's (2017) use of a "*minute paper*" to capture student feedback on different pedagogies being used in an entrepreneurial education programme. It was used to collect a numerical score from the student on how engaged they felt during the activity and collate qualitative feedback on each item, providing a rounded account to the programme facilitator on each component.

This review of research methods in the student engagement field has demonstrated the significant reliance on survey-based research, mostly emerging from the US NSSE, which has been in use for over 20 years. The DF project will be informed by the relevant aspects of the Irish Student Survey (ISS). However, this review has shown that there is merit in considering follow up analysis of ISS open ended data and perhaps in comparing potential uses of alternative survey measurements. Finally, there are a range of visual and qualitative approaches which may be applicable in the DF project, especially in seeking to capture student lived experience and their conceptualisation of student engagement.   Having provided an account of this realist literature review into Student Engagement, this final section of the paper sets out how this work has framed the development of the theoretical model for Designing Futures.

3.   Theoretical Framework.

This literature review focused on the Student Engagement literature as a potential landscape for the study. As a review outcome, it can be stated that there is a strong overlap between the student centred focus within DF and Trowler et al.'s (2020) dynamic pathways to engagement framework. However, in doing so, it is important to reference the seminal work of the Delors (1997) report on the future of HE and its progressive agenda. This report is the work of an independent commission, set up to report to UNESCO on the educational needs of humanity in the 21st century. According to Power,

> "*the Commission's report takes us back to the fundamental purposes of education. The report's title, Learning: the treasure within, reminds us of the importance of learning throughout life, about the need to develop both a vision and a practice of education that goes beyond schooling. The treasure is learning itself, that remarkable asset possessed by every human and every culture which needs to be tilled and used wisely. It is the knowledge, values and wisdom accumulated, the inheritance our forebears have left us which we must not sell. Knowledge and minds are not commodities, not just 'human resources' to be developed, exploited and then cast aside, but treasures to be cultivated to improve the quality of life of both individuals and societies*" (1996, p.188).
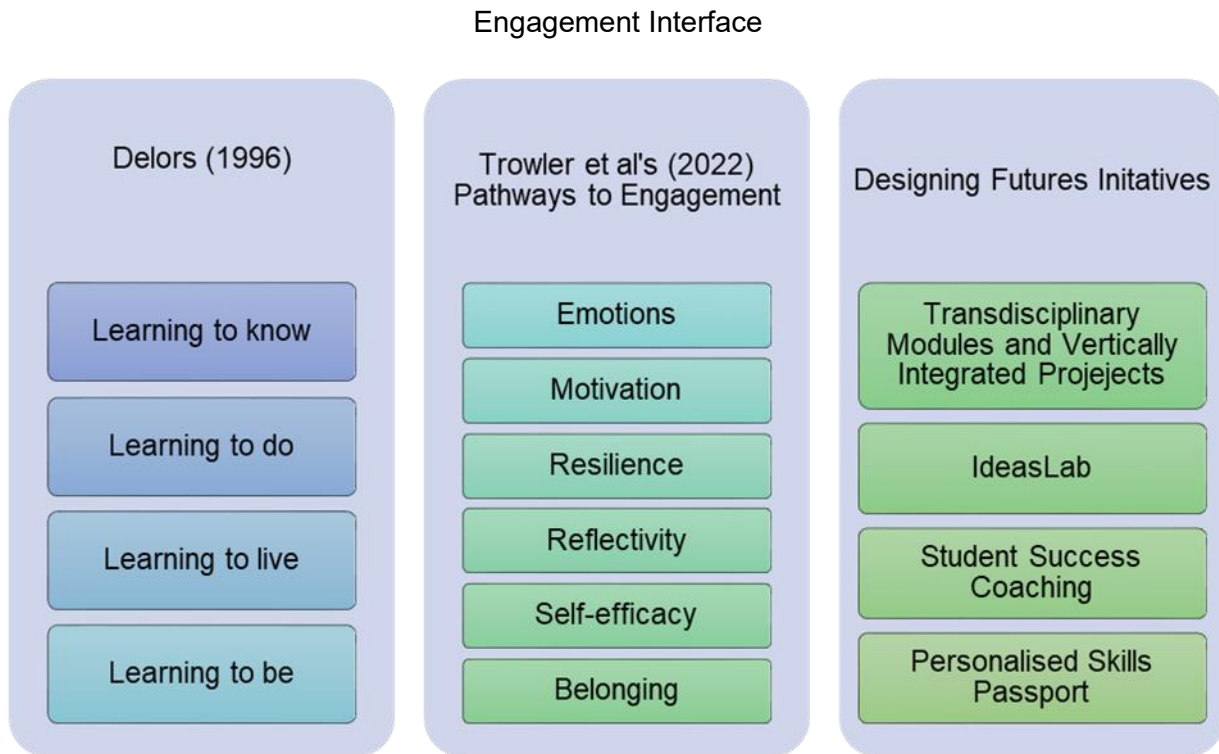
With is focus on active participation and the developing agency and identity of the student, there is a clear overlap with the focus of the DF initiatives. According to Ribeiro,

> "*these four pillars may be regarded as a relevant guiding framework for education development in today's world: learn and know in order to interact within a social context, with direct influence on the individual self, that is "on being*" (2017, p. 209).

Figure 1 below uses the four pillars of the Delors' model and combines these with the central components of Trowler, Allan, Bryk, and Din's(2022) dynamic and active pathways to student engagement. This diagram illustrates how the various DF initiatives[2] overlap with these frameworks.   This is a draft model which will be subject to further refinement and development as the Designing Futures project is implemented and evaluated.

---

[2] For further information on Designing Futures – see https://www.universityofgalway.ie/designingfutures/

Figure 1: Designing Futures Operational Theory.
Engagement Interface

Delors (1996)	Trowler et al's (2022) Pathways to Engagement	Designing Futures Initatives
Learning to know	Emotions	Transdisciplinary Modules and Vertically Integrated Projejects
Learning to do	Motivation	IdeasLab
Learning to live	Resilience	Student Success Coaching
Learning to be	Reflectivity	Personalised Skills Passport
	Self-efficacy	
	Belonging	

4. Conclusion.

This paper has reported on a realist literature review undertaken to scope out the theoretical landscape to underpin the implementation of DF. Three central research questions were used to guide this review. The first question considered whether student engagement theory could provide a coherent theoretical framework to underpin the DF initiatives. The literature review indicated that there is a considerable body of literature on student engagement with over 2000 articles published in peer review journals since Trowler's (2010) comprehensive literature review. From its origins in Astin's (1984) work on student involvement, student engagement emerges as a well theorised concept with frameworks and heuristics addressing issues of student learning, identity and involvement in university structures and processes. A number of key theorists including Zepke's focus on student agency and Kahu and Nelson's (2018) conceptualisation of student engagement aligned well with the progressive and student centric focus of DF. The recent review of Kahu and Nelson's (2018) framework by Trowler et al (2022), with its pathways of engagement and a dynamic, active conceptualisation of efforts to promote student outcomes, fits well with the DF agenda of personalising the student journey. Therefore,

we can conclude that there is a "goodness of fit" between the student engagement literature and the DF project.

The review then considered the second research question, which explored what key messages can be distilled on how best to foster student engagement and belonging. Taking as its core structure a number of central theorists, this section sets out eight themes to summarise the main findings in the literature reviewed on effective practices. These were higher expectations for students, promoting active learning, provision of education, addressing collaboration, complexity, diversity and providing student supports. The final theme involved a number of exemplars of specific initiatives that have been found to improve student engagement. Each of these themes will be utilised by the project team to help identify strengths and challenges as the project is implemented. The final research question considered the range of research methods used in the study of student engagement. The significant role played by quantitative national survey instruments is acknowledged and a number of different survey instruments were reviewed. A number of alternative methodologies were also discussed noting the potential to utilise the qualitative data through open-ended survey items to triangulate survey findings and extend the analysis. The final research methodology discussed narrative and visual methods which collect a wider and richer range of perspectives in a field of study that values the student experience as a core focus.

This realist review was undertaken to ensure that the empirical study of the implementation of the DF was underpinned by a coherent theoretical framework. It sought to ensure that key principles were distilled to guide effective roll-out of project initiatives and described the research methodologies commonly deployed to investigate student engagement. Having conducted our analysis, an operational theory for the DF initiative was designed which aligns core programme initiatives with two conceptual models. Delors' (1996) model takes the widest possible lifelong learning focus on the role of education as the "*treasure within*". Trowler et al.'s (2022) framework is an active and dynamic conceptualisation of supporting students to get the most out of the opportunities that may present themselves during their time at university. These two conceptual maps offer a strong scaffolding for the conceptualisation of DFs. The utility of this conceptual model for DF will be field tested and refined as the project is implemented. In so doing, we hope to make an important contribution, not only for DF, but potentially for other large-scale educational designs promoting innovative student engagement for all.

Acknowledgement.

5.   References.

Astin, A. W. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Personnel*, *25*(4), 297-308.

Balan, P., Maritz, A., & McKinlay, M. (2018). A structured method for innovating in entrepreneurship pedagogies [Innovating in entrepreneurship pedagogies]. *Education & Training*, *60*(7/8), 819-840. http://dx.doi.org/10.1108/ET-05-2017-0064

Bowden, J. L.-H., Tickle, L., & Naumann, K. (2021). The four pillars of tertiary student engagement and success: a holistic measurement approach. *Studies in Higher Education*, *46*(6), 1207-1224. https://doi.org/10.1080/03075079.2019.1672647

Chickering, A. W., & Gamson, Z. F. (1987). Seven principles for good practice in undergraduate education. *AAHE bulletin*, *3*, 7.

Clynes, M., Sheridan, A., & Frazer, K. (2020). Student engagement in higher education: A cross-sectional study of nursing students' participation in college-based education in the republic of Ireland. *Nurse Education Today*, *93*, 104529.https://doi.org/10.1016/j.nedt.2020.104529

Coyle, E., Allebach, J., & Krueger, J. (2006). *The Vertically-Integrated Projects (VIP) program in ECE at Purdue: Fully integrating undergraduate education and graduate research*. Paper presented at the 5th Annual American Society of Engineering Education (ASEE) Global Colloquium on Engineering Education Rio de Janeiro, Brazil., October 9-12.

Delors, J. (1996) *Learning: the treasure within; report to UNESCO of the International Commission on Education for the Twenty-first Century*. Paris: UNESCO.

de Villiers Scheepers, M.J., Barnes, R., Clements, M., & Stubbs, A.J. (2018). Preparing future-ready graduates through experiential entrepreneurship. *Education &Training, 60(4), 303-317.*   https://doi.org/10.1108/ET-11-2017-0167

Elsom, S., Westacott, M., Stieler-Hunt, C., Glencross, S., & Rutter, K. (2021). Finding resources, finding friends: using an alternate reality game for orientation and socialisation in a university enabling program. *Interactive Learning Environments*, 1-15. https://doi.org/10.1080/10494820.2021.1894181

Everett, M. C. (2015). Fostering first-year students' engagement and well-being through visual narratives. *Studies in Higher Education*, 1-13 https://doi.org/10.1080/03075079.2015.1064387

Fosnacht, K., McCormick, A. C., & Lerma, R. (2018). First-Year Students' Time Use in College: A Latent Profile Analysis. *Research in Higher Education*, *59*(7), 958-978. https://doi.org/http://dx.doi.org/10.1007/s11162-018-9497-z

Gomes Da Costa, M., Pinto, L. H., Martins, H., & Vieira, D. A. (2021). Developing psychological capital and emotional intelligence in higher education: A field experiment with economics and management students. *The International Journal of Management Education*, *19*(3), 100516. https://doi.org/10.1016/j.ijme.2021.100516.

Groccia, J. E. (2018). What is student engagement? *New directions for Teaching and Learning*, (154), 11-20.

Hanna, P., Allen, A., Kane, R., Anderson, N., McGowan, A., Collins, M., & Hutchison, M. (2015). Building professionalism and employability skills: embedding employer engagement within first-year computing modules. *Computer Science Education*, *25*(3), 292-310. https://doi.org/10.1080/08993408.2015.1085626

Higher Education Authority (20200. Human Capital Initiative Pillar 3: Innovation and Agility. Dublin: Higher Education Authority. Available: HCI Pillar 3 Projects Hub | Skills and Engagement | Higher Education Authority (hea.ie)

ISSE (2021) *Irish Survey of Student Engagement: National Report 2021*. Dublin: Higher Education Authority. Available: https://studentsurvey.ie/reports/studentsurveyie-national-report-2021

Kahn, P. (2017). Higher education policy on student engagement: Thinking outside the box. *Higher Education Policy*, *30*(1), 53-68. https://doi.org/10.1057/s41307-016-0031-7

Kahu, E. R. (2013). Framing student engagement in higher education. *Studies in Higher Education*, *38*(5), 758-773. https://doi.org/10.1080/03075079.2011.598505

Kahu, E. R., & Nelson, K. (2018). Student engagement in the educational interface: understanding the mechanisms of student success. *Higher Education Research & Development*, *37*(1), 58-71. https://doi.org/10.1080/07294360.2017.1344197

Kahu, E. R., & Picton, C. (2020). Using photo elicitation to understand first-year student experiences: Student metaphors of life, university and learning. *Active Learning in Higher Education*, *23*(1), 35–47.

Karasik, R. J. (2020). Community Partners' Perspectives and the Faculty Role in Community-

Based Learning. *Journal of Experiential Education*, *43*(2), 113-135.

Korhonen, V. (2021). Academically engaged or not? An exploratory study on modelling and assessing the engagement of first-year students at a research-intensive university in Finland. *Assessment & Evaluation in Higher Education*, *46*(7), 1048-1064. https://doi.org/10.1080/02602938.2020.1846016

Krause, K.-L. (2005). Understanding and promoting student engagement in university learning communities. *Paper presented as keynote address: Engaged, Inert or Otherwise Occupied*, Deconstructing the 21st Century Undergraduate Student at the James Cook University Symposium 'Sharing Scholarship in Learning and Teaching: Engaging Students'. James Cook University, Townsville/Cairns, Queensland, Australia, 21–22 September.

Kuh, G. D. (2008). High-impact educational practices. *Peer Review*, *10*(4), 30-31.

Kuh, G. D. (2009). The national survey of student engagement: Conceptual and empirical foundations. *New Directions for Institutional Research*, *141*, 5-20.

Leach, L. (2016). Exploring discipline differences in student engagement in one institution. *Higher Education Research & Development*, *35*(4), 772-786. https://doi.org/10.1080/07294360.2015.1137875

Lloyd, K., Howitt, R., Bilous, R., Clark, L., Dowling, R., Fagan, R., Fuller, S., Hammersley, L., Houston, D., McGregor, A., McLean, J., Miller, F., Ruming, K., Semple, A.-L., & Suchet-Pearson, S. (2015). Geographic contributions to institutional curriculum reform in Australia: the challenge of embedding field-based learning. *Journal of Geography in Higher Education*, *39*(4), 491-503. https://doi.org/10.1080/03098265.2015.1103710

Makransky, G., & Lau, L. (2018). A structural equation modelling investigation of the emotional value of immersive virtual reality in education. *Educational Technology, Research and Development*, *66*(5), 1141-1164. https://doi.org/10.1007/s11423-018-9581-2

McKenney, S., & Reeves, T. C. (2018). *Conducting Educational Design Research* (2nd ed.). London: Routledge.

Morris, N. J., Christie, H., & Barber, J. (2019). 'It's one of the first times I've felt fully engaged': developing student engagement using blogging as a form of assessment. *Journal of Geography in Higher Education*, *43*(3), 343-361. https://doi.org/10.1080/03098265.2019.1612862

Nelson, K. J., Quinn, C., Marrington, A., & Clarke, J. A. (2012). Good practice for enhancing the engagement and success of commencing students. *Higher Education*, *63*(1), 83-96.

https://doi.org/10.1007/s10734-011-9426-y

Ng, P. M. L., Chan, J. K. Y., Wut, T. M., Lo, M. F., & Szeto, I. (2021). What makes better career opportunities for young graduates? Examining acquired employability skills in higher education institutions. *Education + Training*, *63*(6), 852-871. https://doi.org/10.1108/ET-08-2020-0231

Patton, M. Q. (2011). *Developmental Evaluation: Applying Complexity Concepts to Enhance Innovation and Use*. New York: Guilford Press.

Pawson, R. (2006). *Evidence-based Policy: A Realist Perspective*. London: SAGE.

Power, C. N. (1997). Learning: A means or an end? A look at the Delors report and its implications for educational renewal. *Prospects*, *27*(2), 186-199. https://doi.org/10.1007/BF02737164

Renwick, K., Selkrig, M., Manathunga, C., & Keamy, R. K. (2020). Community engagement is…: Revisiting Boyer's model of scholarship. *Higher Education Research & Development*, *39*(6), 1232-1246.

Ribeiro, S. P. (2017). Digital storytelling: learning to be in higher education. In G. Jamissen, P. Hardy, Y. Nordkvelle & H. Pleasants (eds.). *Digital Storytelling in Higher Education* (pp. 207-223). New York: Springer.

Sonnenberg-Klein, J., & Abler, R. T., & Coyle, E. J., & Ai, H. H. (2017). *Multidisciplinary Vertically Integrated Teams: Social Network Analysis of Peer Evaluations for Vertically Integrated Projects (VIP) Program Teams*, Paper presented at 2017 ASEE Annual Conference & Exposition, Columbus, Ohio, June 25-28.

Strachan, S.M., Marshall, S., Murray, P., Coyle, E.J. & Sonnenberg-Klein, J. (2019).Using vertically integrated projects to embed research-based education for sustainable development in undergraduate curricula. *International Journal of Sustainability in Higher Education*, 20 (8), 1313-1328.

Thomas, L. (2012). *Building Student Engagement and Belonging in Higher Education at a Time of Change*. UK: Paul Hamlyn Foundation and the Higher Education Funding Council for England. Available: https://www.advance-he.ac.uk/knowledge-hub/building-student-engagement-and-belonging-higher-education-time-change-final-report

Thompson, L. J., Clark, G., Walker, M. & Whyatt, J. D. (2013). 'It's just like an extra string to your bow': Exploring higher education students' perceptions and experiences of extracurricular activity and employability. *Active Learning in Higher Education*, *14*(2), 135-147.

Tight, M. (2020). Student retention and engagement in higher education. *Journal of further and Higher Education*, *44*(5), 689-704.

Trolian, T. L., & Jach, E. A. (2020). Engagement in college and university applied learning experiences and students' academic motivation. *Journal of Experiential Education*, *43*(3), 317-335.

Trowler, V., Allan, R. L., Bryk, J., & Din, R. R. (2022). Pathways to student engagement: beyond triggers and mechanisms at the engagement interface. *Higher Education*, 84(4), 761-777 https://doi.org/10.1007/s10734-021-00798-1

Trowler, V (2010). *Student Engagement Literature Review.* York: Higher Education Academy.

Tymon, A. (2013). The student perspective on employability. *Studies in Higher Education*, *38*(6)841-856. https://doi.org/10.1080/03075079.2011.604408

Webb, O. J., & Cotton, D. R. E. (2019). Deciphering the sophomore slump: changes to student perceptions during the undergraduate journey. *Higher Education*, *77*(1), 173.

Xerri, M. J., Radford, K., & Shacklock, K. (2018). Student engagement in academic activities: a social support perspective. *Higher Education*, *75*(4), 589-605.

Zaitseva, E., Milsom, C., & Stewart, M. (2013). Connecting the dots: using concept maps for interpreting student satisfaction. *Quality in Higher Education*, *19*(2), 225-247. https://doi.org/10.1080/13538322.2013.802576

Zepke, N. (2015). Student engagement research: thinking beyond the mainstream. *Higher Education Research & Development*, *34*(6), 1311-1323. https://doi.org/10.1080/07294360.2015.1024635

Zepke, N. (2021). Mapping student engagement using a theoretical lens. *Teaching in Higher Education*, 1-18.

Zepke, N., & Leach, L. (2010). Improving student engagement: Ten proposals for action. *Active Learning in Higher Education*, *11*(3), 167-177.