Identity Matters: A Framework for Bridging Contemporary e-Learning Theory with Online Practice

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Abstract: We are increasingly realizing that technology and its use in learning contexts is not benign. With the advent of more powerful technology tools, including Artificial Intelligence (AI) ones, combined with the historically significant changes that have occurred in education over the last four years, there are more reasons than ever to examine their influence on human beings in the process of "being educated". The aim of our 3-year longitudinal study was to understand how programs being offered at a fully online technical higher education (HE) institution in Chile influenced the identity development of students from socio-economically and educationally disadvantaged backgrounds. A Participant Action Research (PAR) approach was adopted to the study that involved macro, meso and micro-driven changes being made to programs. These changes involved aligning the instructional design, pedagogical approaches, and technology tools of programs with contemporary e-learning theory and 21st century learning goals. Previously, we provided three in-depth reports of the evolving changes on learners' identities - in the beginning, mid and end phases of their programs. We also reported on teachers' perspectives of learners' evolving identities and the transformation of their own roles and practices during the change period. In this paper, we add to those findings with the results of a recent inquiry into the perspectives of macro-level administrators who were instrumental in the collaborative effort to bring about change to the institution. In this latest study, we employed in-depth focus group and individual interviews to unpack what the change involved on the part of these decision makers in terms of their own epistemological and ontological perspectives, their roles in the institution and their future goals for the organization. The framework we have developed for schematizing the results of these previous inquiries and those of the overall longitudinal study could prove useful in other organizations that are awakening to the need to successfully put e-learning theory to practice in their institutions. The insight to be gained in this framework could add to their efforts to seek pragmatic ways to bring about systemic changes in their online programs and to graduate students with the kinds of identities and skills that will best equip them for the complex world in which they will work and live.

Keywords: Learner identity, Framework for institutional change, Contemporary e-Learning theory and 21st century goals, Higher education, Aligning design/pedagogy/technology in practice, Online learning

1. Introduction

Renowned author, psychiatrist and neuroscience researcher, Iain McGilchrist (2021), sources many of the current metaverse challenges we face in our world, *including those in education*, to a disturbing global dominance of left-brain thinking (McGilchrist, 2021, Hansen, 2016). His arguments are based on hemispheric theories. Although controversial at this point, we see merit in these theories to unpack the complexities and issues being faced in online learning programs in the HE institution in our study, as well as more broadly.

McGilchrist (2021) explains that in left hemisphere thinking, the attention is on tools, their parts and processes whilst guarding a detached view of these objects and uses. Right brain thinking reflects a sensitivity to living things, their organic nature and to considering them with flexibility as they constantly change, keeping the global far-reaching picture in focus. Left hemisphere thinking has a preoccupation with systems, generalizations, numbers, and categorization, and can provide only a static (re)presentation of the world, such as a map will do, giving basic information devoid of the complexities of reality. From this position, change is problematic, and no alternatives are seen but the status quo. In a scenario in which right brain thinking plays a lesser role, the intricacies of what is happening in the world or in a specific context, the 'realities' that are taking place all around us and their global consequences go unnoticed and discounted as unimportant. McGilchrist (2021) warns us, backed with substantial empirical research, that the results of this preponderance for left brain thinking can come with grave consequences. The same could be said to apply in education.

Although one might question the legitimacy of hemispheric theory, there are certainly parallels that could be drawn to the kinds of thinking reflected in educational discourse in the last three decades regarding the use of

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technology. Historically, it can be said that scholars have shown an increased interest in digitalized learning to which the preponderance of current technology-related journals attests, not to mention the expanding numbers brought on by the hype in AI (Farrokhnia et al., 2023). Yet, much of this attention and effort has been confined to developing effective technological systems, certain procedures, the manipulation of the tools involved, access issues, levels of adoption and acceptance and their operations (Doo, Zhu and Bonk, 2023). The fuller picture of how these systems, particularly within HE institutions, actually impact individuals not only in the present but in their futures, has until recently only received moderate attention (Wright et al., 2023; Vlachopoulus and Makri, 2021). Indeed, research into the digitalization of HE (Jensen, 2020; García-Morales, Garrido-Moreno and Martin-Rojas, 2021) seems to have been primarily preoccupied with the material, its accessibility, assessment, development and the economic concerns and operations related issues, from a decontextualized position. In this scenario, close attention to context and persons involved in e-learning have been relatively unexamined - and not without consequences.

While not negating the usefulness and importance of earlier scholarship based in technology tools and process focused studies, they might lead one to agree with Reeves and Lin's (2020, p. 1991) observation that: "The research we have is not the research we need". More recently, an increased interest in the deeper repercussions of technology use on learners and learning in institutional contexts, is slowly emerging in educational scholarship. Indeed, the surge of literature that has been produced with the forced pivot to online learning during the COVID-19 pandemic certainly attests to this encouraging change in focus. Current reviews of this scholarship (Zhang et al., 2022; Doo, Zhu and Bonk, 2023) clearly indicate a broadening awareness of the challenges that exist in these online learning contexts for learners and their learning especially in HE institutions. At the same time, based on these reviews it appears that relatively few efforts are being made to investigate viable and sustainable solutions to meet those challenges.

Calls for proactive initiatives and interest in redirecting thinking about how technology is being used from a deeper and broader, long-term perspective to meet the challenges that exist in HE, apparently are not being heard. Given the global crisis that many view HE is in at this point post pandemic (Facer and Selwyn, 2021), and that the advent of AI is compounding, without the knowledge of how the use of technology in HE spaces is impacting individual learners, the situation can only worsen.

Of course, redirecting such a focus from systems and instead towards the human beings that occupy the spaces in these systems would involve a significant change of course in institutional thinking. Not an easy call as Gordon Jones, founding dean of the Boise University College of Innovation and Design (cited in Marcus, 2020) has pointed out: "Universities [HE institutions] may be at the cutting edge of research into almost every other field…but when it comes to reconsidering the structure of their own [institutions], they've been very risk averse." It's not surprising then that there is an obvious dearth of e-learning literature examining cross HE institutional changes in how technology-supported learning relates to learners, their identities, and their development. This gap is becoming alarmingly obvious especially given the debates about how HE institutions will face the imminent impact of AI on learners and learning (Farhi et al., 2023).

The institution in which our longitudinal study took place was prepared to reverse its thinking and preoccupation with systems and operations. They recognized from a broader perspective how the online programs they were offering were not meeting their policy goals for the kinds of profiles with which their individual students were graduating. There was a growing acknowledgement that the instructional designs of their programs, the pedagogical practices of their teachers and the use of technical resources in their programs supported industrial era workplace processes and mindsets in their students instead of promoting the identities, competences, and skills that they would need in their 21st century working lives.

The institution acknowledged as well that redirecting the established thinking at the time about how to run an online learning institution would require the collaborative work of individuals at all levels and implicate all programs. One of the co-authors of this report, a senior administrator in the institution, led the PAR project to enact large-scale changes in the institution. The key aim of the longitudinal PAR study was to facilitate a collaborative initiative to make broad changes across the institution, and in so doing, to understand how this sweeping initiative to align instructional designs, pedagogical approaches, and the use of technology with current e-learning theory and 21st century goals might impact learners and their learning both in the context of the institution and beyond.

The focus of our longitudinal study then was not just on learners but on all stakeholders in the institution at the macro, meso, and micro levels, in other words, top administrators, directors, heads of programs, academic support team members (*n=11*), educators (*n=82*), and most especially on learners (*n= 2,300*; *n=14*). We were

aiming our focus on the experiences of these groups of stakeholders in the institution over the 3-year period during which the alignment of the change initiative was put in place in all online programs.

The following questions guided the longitudinal action research project:

1. In what ways do individuals at various levels of the institution perceive the changes being initiated across all online programs in the institution?
2. What implications did these changes have for their roles and perspectives of learning?
3. What was the impact of the changes made on the identities of these individuals?
4. How does the experience of the changes made and its sustained impact on learners' identities and learning in the short and long terms predict the nature of online programs in this institution in the future?

In the next sections, we outline the theory and literature that framed and supported all four smaller inquiries conducted during the change trajectory (Charbonneau-Gowdy and Galdames, 2021, 2022, 2023a; Charbonneau-Gowdy et al., 2023). We then provide details about the methodological framework - the participants, the context, the research design of the overarching longitudinal study, the data collection and analysis processes and ethical procedures.

2. Theory and Literature Underpinnings

As explained in the previous reports of the smaller studies conducted within the longitudinal PAR project (Charbonneau-Gowdy and Galdames, 2021, 2022, 2023a; Galdames and Charbonneau-Gowdy 2023b) the core of this change initiative in the institution lay in contemporary e-learning theories, especially those reflecting 21st century socio-cultural perspectives and goals. These perspectives and goals: a) place students and their agency at the centre of the learning process; b) are based on the understanding that learning is a complex interactive social phenomenon; c) engage students in community by collaborating in the co-construction of knowledge, based on their individual social context and experiences; and d) have important implications for students' competencies and identities in a dynamic, technology-driven society. The three components of the initiative we had launched at the institution involved: 1) the pedagogical practices of instructors and online students, 2) the instructional designs at the core of these practices and 3) technological tools used to support the programmes. These components were intended to reflect the principles and theoretical objectives listed above and as a way of possibly influencing students' learner identities and practices throughout their formative process in the institution.

2.1 E-Learning in Higher Education Institutions

Many scholars would agree that up until the pandemic years, a large part of the discourse that did exist in e-learning scholarship around context reflected both the resistance of many stakeholders in HE towards online learning and/or a belief in its ineffectiveness in supporting quality learning. A review of the literature of that period suggests three reasons behind this reservation. One reason can be explained by top-down, financially driven decision making that promoted e-learning for cost-cutting and/or income generating reasons. From this position, decision makers expected greater numbers of students, i.e. "clients" (Calma and Dickson-Deane, 2020), would consume information on LMS platform systems, would work autonomously at content-focussed exercises, gain credits in regular assessments that checked levels of information acquisition and where those few who best adhered to this scenario of learning would be categorized as 'ideal', self-regulated learners. Indeed, many prestigious institutions in the western world, despite their democratizing ideals, were attracted to this mindset, investing in large scale MOOC's as a vehicle to promote 'learning'. And yet research even from pioneers of this modality clearly indicated that these utilitarian, so-called efficient systems of educating led to disappointing levels of attrition and questionable degrees of learning (Siemans, Gasevic, and Dawson, 2015).

A second reason for the resistance to online learning in the pre-pandemic era of HE was found to stem from faculty. Investigations of this resistance revealed that many educators saw the use of technology imposed by macro level decision-making, whether for blended or fully online learning, as a relinquishing of their roles as "experts" and as transmitters of key knowledge in their areas of expertise (Bakir, 2016; Singh and Hardaker, 2013). Loss of control of what is being learned and how learning takes place, not to mention the assessment of that learning were frightening for large numbers of faculty. Many of these same fears can being heard today in the conversations around the surge of AI into HE contexts (Thompson, Corrin and Lodge, 2023; Hodges and Ocak, 2023).

A third prime reason for resistance came from students themselves. It is not surprising that many of those resisting saw that, although not ideal, a talking 'expert' on a stage and the company of large numbers of fellow learners in physical classrooms being replaced by a requirement to work in isolation consuming information, and completing content-driven exercises with regular assessment checks, as poor value for the relatively high fees they were paying to be "educated" (Stevanović, Božić and Radovic, 2021; Usher et al., 2021; Charbonneau-Gowdy et al., 2023). In other words, from their view the return on their investment in so-called 'learning' online, yielded poor results.

Importantly, visible signs of resistance permeate many of the stories from the pandemic as well. In accounts of online experiences in the surge of literature documenting this historical period in educational history, scholars have reported many of the challenges that are embedded in this resistance – faculty unpreparedness, lack of engagement on the part of learners and questionable learning outcomes (see a review in Zhang et al., 2022). As pointed out above, despite the knowledge gained from these accounts regarding challenges to online learning, the question still remains on how to respond on a broader scale with solutions. The realization that the challenges our institution was facing in their regular online programs are common to many HE institutions during and post pandemic (García-Morales, 2021). The gap in knowledge in terms of finding viable solutions, was a key driver in our study.

Migocka-Patrzałek et al's (2021) study of the perceptions of students and teachers in a HE institution in Poland towards the move to distance learning offered some insight into the kinds of solutions that could inform our own study. Based on their analysis that indicated a general unfavourable response by students and teachers to the online learning modality, the authors provide valuable recommendations to respond to some of the major issues faced. These recommendations include: the role of teacher training in students' success and satisfaction; the importance of 'soft power' management in a step-by-step process in altering the outlook of resistance on the part of faculty; changes to assessment policies that emphasize positive learning outcomes in distance learning; the key to achieving high-quality programming for teacher training in distance learning practices to be ongoing; the need for an emphasis on community building and student engagement. Each of these recommendations are reflected in the steps we took to revamp the distance programs in the longitudinal project. At the same time, as recommendations they fall short of documenting and grounding the results of implementation which was an explicit goal in our longitudinal study.

2.2 Institutional Changes in e-Learning Practices

Sources of resistance to online learning in HE might be considered difficult to understand given the e-learning theories that have been produced over the last two decades to support quality practice online (García, 2019). As described in our earlier report (Galdames and Charbonneau-Gowdy, 2023b) based on these theories, *social interaction* is a backbone for the creation of intentional participation in a learning community. From this perspective, collective learning experiences and building community through collaborative or co-constructed learning processes is emphasized over individualism. These theories have a common vision which is to position students as the protagonists of their learning and as active participants involved in a mutual relationship with others supported by social media technology (Picciano, 2017). And yet despite the existence of these well-grounded theories and the principles they promote, which are proven to lead to effective learning in online contexts, scholarship accounts during the pandemic vividly highlight the fact that applying these theories into practice has not been happening.

Some scholars explain the reason for this slow uptake of theory to practice in the lack of clear examples of how to apply sound e-learning theory in "real" online teaching and learning contexts (Pange et al., 2011), especially on a broad institution-wide scale. On the other hand, scholarship in Instructional Design (ID) is indicating that IDs can be successful vehicles for ensuring conformity in the application of theory, models, and technology in practice (Margaryan, Bianco and Littlejohn, 2015; Adinda and Mohili, 2020). In the present study we were guided in developing an appropriate ID by employing both Margaryan's 10 principles of ID development (Table 1) as well as using Picciano's (2017, p.178) Multimodal Model for Online Education (Figure 1). We were confident that these principles and Picciano's model would provide a strong theoretical backbone to our ID and reflect the epistemological goals we were seeking to promote.

Table 1: Guiding principles of effective IDs (Margaryan, Bianco and Littlejohn., 2015)

Guiding Principle	Description
Problem-centred	Learners learn skills in the context of real-world problems
Activation	Learners activate their existing knowledge and skills for developing new skills
Demonstrated	Learners learn when exposed to 'real' examples of new skills to be learned rather than information.
Application	Learners have opportunities to apply their new skills to solve problems.
Integration	Learners have opportunities to reflect on, discuss and defend their new skills
Collective Knowledge	Learners contribute to collective knowledge
Collaboration	Learners collaborate with others to build knowledge
Differentiation	Learners have options according to their individual needs
Authentic Resources	Learners are put in real world situations
Feedback	Leaners are given regular feedback

As illustrated in Table 1, Margaryan, Bianco and Littlejohn's (2015) principles reveal practical guidelines in developing effective IDs for online learning. In the context of the 3-year PAR Project, the principles are closely aligned with the pedagogical practices that were initiated in all programs across the institution.

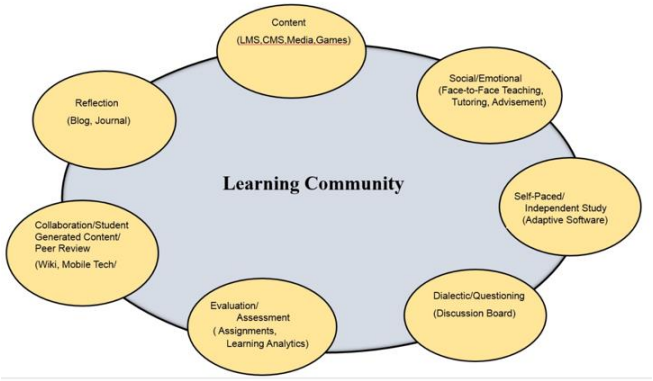

Figure 1: Multimodal Model for Online Learning (Picciano, 2017)

Picciano's model (2017) was another important influence on our study in terms of goals we were seeking to promote. The model reflects and is supported by Moore's (1989) Interaction Theory (IT), Garrison, Bianco and Littlejohn's (2000) Online Learning Theory (CoL), Siemans' (2004) Connectivism Theory of Online Learning (CTOL) and Harasim's (2012) Online Collaborative Learning theory (OCL). It is composed of seven interconnected elements that foster the generation of learning experiences needed to deliver a quality online programme. The components are reflected in the pedagogy/design/technology aligned programmes that participants and all newcomers to the institution in our study faced when returning to formal learning after many years, and completely in an online space (Charbonneau-Gowdy and Galdames, 2022). The learning pathway of the online programmes guided by these components generated the types of activities that have been shown to facilitate students to appropriate new learning practices and to reconstruct their identities – a key concern of both researchers and stakeholders in the institution.

In an earlier study conducted by Charbonneau-Gowdy and Chavez (2019) in the context of online learning, a direct line was drawn between institutional change and identity. Analysis of extensive evidence of qualitative data collected at each of the macro, meso and micro levels in a private-for-profit HE institution in Chile revealed identities counterproductive to lasting change and quality online learning. This evidence uncovered a leadership characterized by top-down decision making that conflicted with quality learning outcomes; a program administration forced into a disadvantaged position of learn-as-we-go in terms of academic leadership; teaching faculty that were marginalized in decision-making processes and limited in their power to create quality conditions for learning in their online courses; and a context where learners' varying forms of capital were being ignored and instead they were being programmed to assume identities as "victims" and roles lacking in agency. The model the authors create (Figure 2) for HE institutions offering online learning draws attention to the fact that change involves reflective action on the part of players at all levels in the institution. And further, this multi-level reflection must acknowledge the consequences of any decision making for learners and learning. The authors ask: Will that decision making lead to the empowerment of learners and allow them to become behaviourally, emotionally, and cognitively (Fredrecks, Blumenfield and Paris, 2004) engaged? Will those decisions reflect the current primary goal of education to empower individuals to direct their own learning across multiple settings and throughout their lifetimes (Sharples, 2000)? Yet although these questions and the results of this earlier study guided and benefitted the change process in our PAR project, they fall short of

providing empirical evidence of the actual feasibility of such a large-scale initiative as the one in the context of our longitudinal study.

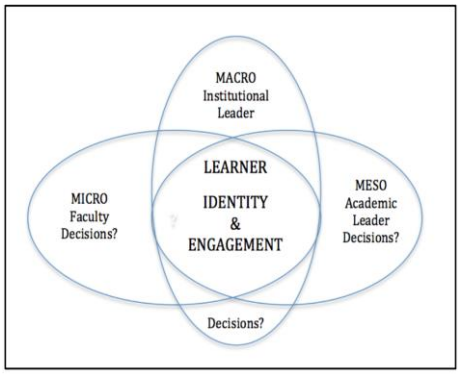

Figure 2: Key decision-making model in institutional change (Charbonneau-Gowdy and Chavez, 2019)

2.3 Identity and Investment as a Reflection of Quality Learning

As we pointed out in a previous report that formed part of the longitudinal study (Charbonneau-Gowdy and Galdames, 2022), learning from a socio-cultural perspective is receiving increased attention in the e-learning literature. Within this perspective, the academic sphere plays a fundamental role in the construction and reconstruction of people's identities. Norton (Darvin and Norton, 2015) defines identity as "how a person understands his or her relationship to the world, how that relationship is constructed across time and space, and how the person understands possibilities for the future" (p. 4). Seen from this perspective, identity is conceived as a site of struggle, structured by the power relations existing in social contexts, including educational systems. As Bourdieu (1998, p.43) points out "A large part of social suffering is due to the poverty of people's relationship with the educational system, which not only determines social destinies, but also the image they have of themselves and the image of their destiny".

Many scholars have shown that online education, based on a lack of human interaction and instead on machine-mediated content, has placed students as passive recipients of information and pushed them to work individually – a scene typical in the migration to the online modality in the wake of COVID-2019. This scenario, reflective of left-brain reasoning, limits the possibility for individuals to become more understanding of themselves and their learning experiences, prevents them from reconstructing their identities, and marginalizes them from accumulating social, cultural, and symbolic capital.

Norton has coined the term 'investment' (Darvin and Norton, 2015) to explain an opposite scenario in which learners are offered opportunities to exercise agency in their learning through interaction and knowledge construction with others. In these social interactions, which increasingly occur in digital spaces, an individual's strengths, experience, and knowledge are made available to others. In reaction to such favourable conditions for exercising agency, a learner's desire to invest in learning is ignited with a view to gaining a broader range of symbolic and material resources. In other words, in these ideal conditions, learners will choose to engage and invest in learning for the value they see in doing so for increasing their capital and social power and for the visions they have of their futures (Darvin and Norton, 2015, p.46).

Engel and Coll's (2021) model of learner identity (LI) also served to frame our inquiry (see Figure 3). This model explains the various components in learning contexts, including multimodal-based ones, that are involved in the act of identity mediation. The elements include: i) reasons for participating in learning activities and the learning goals pursued; ii) significant others participating in the learning experiences and their acts of recognition; iii) discursive resources present in the broader sociocultural context; iv) convergence or interference of other identities of a person; v) characteristics of the learning activities; and vi) emotions associated with the learning. Importantly, the model exposes the critical nature of social context and various material resources to our understanding of learner mediation of identity especially in online sites.

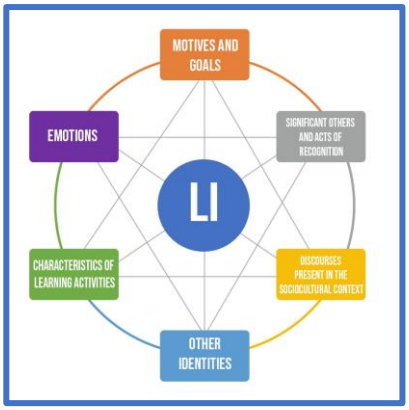

Figure 3: Key Elements in Mediating Learner Identity (Engell and Coll, 2021, p. 5)

Banks et al. (2007)'s work with marginalized communities and the principles they have developed further served to guide our efforts to connect learners with the kinds of quality learning and empowering identity changes that were mediated in online learning in the context of our study. Essentially, the four principles remind us that: 1) learning is situated in both socio-economic and historical contexts; 2) learning is not solely limited to formal contexts but occurs in everyday lives across the lifespan; 3) learners need multiple sources of support; and 4) learning is facilitated when learners are encouraged to build on their own resources and communities to expand their knowledge. Grounded in these principles, their work reveals encouraging evidence of what they call life-long, life-wide and life-deep learning. Important to our PAR study, these principles implicate all stakeholders in the educational process - policy makers, educators, families and learners themselves, as well as the use of technology as an essential ingredient in the learning practices and development of individuals. Yet, whereas the Banks et al. (2007) project involved young marginalized and racialized youth in North American context, students in our study, although they shared similar backgrounds, were full-time working adults in Chile, most learning online for the first time. Also, inherent in the decision to conduct a longitudinal study and to initiate the changes in terms of design, pedagogy, and the use of technology across the institution and in all programs, it was of particular interest to the institution involved to determine the sustained impact of these changes on individuals and their learning over the long term.

Framed by this literature and theory, we set about to redirect thinking about how to conduct online programs across the HE institution in our study. In doing so, we sought to offer an opportunity to those in the institution to redefine their roles, their identities, and their views of what constitutes effective online learning. At the same time positioning ourselves from a qualitative perspective, we were prepared for not knowing what the outcome of the initiative would be. Each context is unique; and there is no one-size-fits-all answer to challenges on any scale. Yet in the process of conducting our longitudinal study across a large online institution, we hoped to gather valuable insight into online learning and explore those hard-to-come by solutions to its effectiveness for learners and learning that have eluded many of us in education for quite some time.

3. Methodology

The longitudinal study spanned 3 years in which bi-monthly a new cohort of students entered the institution. As stated above, we chose to conduct a qualitative action research (PAR) project. Action research is well suited to investigate complex human activity and for uncovering participant voices (Creswell, 2007, Denizen and Lincoln, 2005). Typically, PAR is driven by a collaborative incentive to respond to challenges and effect changes in educational settings and organizations. Within PAR, the collaboration and participation of key players across the institution was possible and expected - in our view vital to the change initiative. We were also aware that using a qualitative research approach, i.e. a domination of right-brain-thinking, would provide us with the tools that could best uncover the type of complex human-centred, rather than process-centred information that was crucial to our understanding. We were seeking to uncover how shifting to a social-based ID in courses and programs which included learner-centred pedagogical approaches and the use of technologies to support community building, were impacting learners' identities and learning and indeed influencing stakeholders at all levels in the institution involved in the PAR process.

While the overall longitudinal project was conducted using a PAR approach we applied case study methodologies when collecting data at various intervals during the larger study – i) at the beginning with cohorts of students who were entering the institution (Charbonneau-Gowdy and Galdames, 2021); ii) then again with a group of

students who had been exposed to changes for 6 months (Charbonneau-Gowdy and Galdames, 2022) and iii) after 18 months in the program as these same students exited the institution (Galdames and Charbonneau-Gowdy, 2023b). In an additional case study, we collected evidence from faculty (Charbonneau-Gowdy and Galdames, 2023a), uncovering their perspectives of how the changes were impacting their roles and approaches as well the students in their courses. Methodological details and research designs for each of these individual case studies can be found in earlier reports as listed above. Findings from these studies as well as a more recent mini case study involving a small group of macro/meso/micro level administrators (*n=11*) are interwoven in the analysis and findings and summarized below.

3.1 Research Design

Table 2 illustrates the various overlapping phases of the longitudinal study and the tools used to collect the data in each phase. These research phases coincided with the 3-pronged program changes in ID, technology tools and pedagogical practices to which all in the institution in parallel were adopting and in which they were playing key roles. For teachers and administrators, and especially for a majority of learners, there was a significant adaptation process to the use of technology for learning as opposed to simply for personal use, to the newly established learning approach and to the expectations of their program design.

Essentially, the institutional changes included: a) adding regular synchronous videoconferencing sessions in all courses for building learning communities; b) providing increased opportunities and resources for student collaboration on both learning assignments/projects and assessment processes; c) using group project-generated media as course content ; d) incorporating forums, padlets, and career-designated community sites into courses for students to exchange ideas and opinions; and e) creating separate institution-wide faculty and student online community sites.

Table 2: Research Design – Longitudinal Study

Phases	Type of data collected	Description
Phase 1: Introducing change November 2020 to June 2021	Survey	Student's experiences in online courses prior to changes in ID/approach/technology (*n=356*), faculty perceptions of students as changes are being rolled out (n=57) and student feedback after 3 months (n=298)
	Interviews	Series of student focus groups prior to change *(n=14),* at the initial stages of the roll-out *(n=11)* and after 3 months *(n=40)*
	Field notes	-Faculty online capacity meetings at outset of change (n=60), faculty perceptions of newly installed synchronous sessions (*n=49*), collaborative faculty capacity building sessions after 3 months (*n=43*), feedback from area directors (*n=3),* -Institutional documents: previous ID documents, student attendance records, mission statement, digital activity, newly developed ID documents
Phase 2: Setting 3-pronged changes in full motion March 2021- July 2022	Questionnaire	Student participants' reflective journals (*n=54*)
	Interviews	12 hours of bi-weekly focus group (*n=6*), 17 hours individual (*n= 27*) interviews, 1.5 hours for a whole group (*n=12*) interview
	Observations	3 hours of videoconferencing of synchronous classroom sessions
	Field Notes	Institutional documents including enrolment figures, policy, attendance records, researcher's reflective journal, digital activity of online forum sessions, student progress reports prepared by faculty
Phase 3: Analyzing and assessing sustained changes August 2022 to November 2023	Surveys	Teacher feedback on institutional changes (*n=73*) General student body feedback of pedagogical resources for 2022 (*n=726)* and 2023 (*n= 544)*
	Interviews	2 hours of a teacher focus group session (*n=9*), 6 hours of individual feedback sessions with original participants (*n=12*), focus group sessions with macro/meso/micro administration (*n=11*)
	Field Notes	Feedback observations (*n=75*) from a teacher strategy building workshop, reports of academic indicators of the institution, qualitative records of students' academic progress
	Observations	Students' digital activity (degrees of participation and collaborative work)

3.2 Context and Participants

The study was conducted in a HE technical institute in Chile. Chile is considered an economically stable country, one of only two members of the Organization for Economic Co-operation and Development (OECD) in South America. Yet, this stability has not been enough to appease the social inequality that has led to marked social unrest and protests comprised mainly of students seeking greater access to quality education. This drive for higher levels of education can explain why there has been a sustained growth in enrolment in the first year of undergraduate education in the country. Statistics indicate a 17.9% increase in 2022 compared to the previous year, and a 162.7% increase in the last five years.

Online education in the country has an entry profile mainly of working adult students, since this modality allows them to continue or resume their studies, especially because of the flexibility within this modality to reconcile their different roles (Chávez, 2017). The challenges posed by the social and educational demands in Chile are fully aligned with those outlined by UNESCO (2022, p.4), in the context of lifelong learning: "The abiding challenge for adult learning and education is to reach those who need it most". Reaching those who need it most is considered by UNESCO to be an indispensable factor to achieve equity and inclusion, to alleviate poverty and to build equitable, tolerant, sustainable, and knowledge-based societies. In order to respond to these challenges, HE institutions are required to take their online programmes along the path of continuous improvement to guarantee quality processes in accordance with the learning demanded by the 21st century.

The institute where the study was conducted is privately owned, founded in 1985. Since 2017 it offers all its programmes 100% online, one of the few HE institutes in Chile pre-pandemic to do so. Currently, the institution offers 19 technical careers organised in 5 areas: administration, education, industrial, health and social. Its mission includes not only the development of its students' professional disciplinary skills and competences, but also the promotion of their well-being, attitudes, and capacity to respond to the current dynamic demands of working and social life. As mentioned above, in general, learners are fully employed adults, mostly from socially, educationally, and economically disadvantaged backgrounds. Most are seeking to upgrade their skills or obtain a certification that will enable them to propel their career path in their field of work. The programmes received an average annual intake over the 3 years of the research period of 2,500 new students, composed of 58% women and 42% men. The average attrition rate before the longitudinal study began in 2020 was 44%.

Student participants

At the onset of the study, 14 individual students from an incoming cohort at the time agreed to participate in interviews at various stages of their programs - beginning, middle and end, over the length of their program. Of these original participants, 12 individuals ranging in ages from 20 to 60 years old, participated in the final interviews at the end of their programs - 11 females and 1 male. Their technical careers included: Early Childhood Education (3), Information Systems and Networks (1), Logistics Management (1), Human Resource Management (2), Pharmacy (3), Social Work (1). One of the original participants withdrew for health reasons although continued his studies and another left the institution.

Teaching faculty participants

Teachers in general in Chile are poorly paid and lack employment stability resulting in a recent concerning national drop in interest in the profession. The institution where the study took place employs on average 150-200 faculty members – 46%, permanent and 54% non-permanent, the latter contractual, many of whom must supplement their incomes by teaching elsewhere (Simbürger and Neary, 2016). Faculty participation (*n=82*) included attending collaborative capacity developing and awareness-raising sessions, various guided workshops, and meetings to promote the development of social learning-based teaching practices, focus group interviews and responding to feedback questionnaires.

Administrator participants

The most recent case study in the context of the PAR project involved institutional administrators (*n=11*). At the macro level this included: a) the Rector; b) the Vice Chancellor of Administration and Finance; and c) Vice-rector for Communication and Liaison with the Environment. Each of these individuals performs strategic management functions in their different areas to support training. The Academic Vice-Rector did not participate due to her role as co-researcher in the PAR project. Participants from the meso level included: a) Director of Virtual Education; b) Director of Teaching; c) Head of Administration (program area); and d) Head of Health (program area). Meso level participants are expected to provide teaching support and are responsible for the processes directly connected to the exercise of teaching. “Accompanying tutors”, as they are called, who participated in

the more recent inquiry, administer at the micro level by socio-emotionally accompanying students and monitoring their academic progress.

3.3 Data Collection and Analysis

Data were analyzed using qualitative coding methods based on a combined inductive-deductive process (Miles et al., 2014). Through this rigorous process that is recognized for providing meaningful, credible, and practical results (Vaismoradi et al., 2016), we sought to ensure the reliability of the findings. After establishing a conceptual framework, the six steps suggested by Braun and Clarke (2006) were followed: i) familiarization with the data; ii) generation of initial codes; iii) search for themes; iv) review of the data for the verification of the themes; v) defining and choosing representative theme names; vi) preparation of a report in relation to the findings and responses to the research questions.

Descriptive statistics were employed to analyze the data tabulated from the three institutional-generated surveys conducted during the period of the larger study. This analysis provided an overall view of students' experiences online before, during and once the new ID approach had been fully implemented. These perceptions were uncovered from students' perspectives in their responses to the surveys and corroborated with observations and opinions from micro and meso level faculty.

Throughout the data collection and analysis process, adherence to rigorous ethical standards, including rules for privacy, anonymity, and maintaining the rights of participants set by the university to which the researchers are connected, were strictly maintained.

4. Analysis

Over the three years of the study, a large body of data from a variety of data sources (see Table 2) was collected. The ongoing analysis that we conducted over this period and reported on in our previous case studies (Charbonneau-Gowdy and Galdames, 2021, 2022, 2023a, Galdames and Charbonneau-Gowdy, 2023b), provided deep insights into changes that were being made and their implications on the short and long terms - a unique advantage of the cyclical nature of a PAR approach. In summing up the findings of these previous studies, we intertwine an analysis of evidence uncovered in our most recent inquiry into administrators' perspectives (*n=11*) of the changes in the institution. We consider this evidence inextricably tied to a deeper interpretation of the extent of changes being made at all levels and to its sustained impact.

In the 3-year period of the study and the 3-pronged redirection and aligning process in ID, pedagogy, and use of technology, much was required of everyone in the institution. This participation included: i) administrators who relinquished their grasp on status quo policies and processes, ii) teachers who were called to let go, in many cases, of long held ways of being and doing in their practice of teaching, iii) learners who after years outside the classroom and despite their busy "other lives' to open their minds to viewing learning and their roles in that process "through different eyes". Indeed, at each of these levels the stakeholders in the institution were called upon to re-examine their epistemological views, to question their long-held truths about learning and to see the process of learning in ways that meant more engaged participation and agentive actions. Indeed, as Ursula Franklin (2003, n.p.), the renowned scientist and prolific researcher points out: **"**In order to understand our worlds more deeply, in order to access new knowledge, we have to look at ordinary things differently, through different eyes".

Combining and analyzing the results of the three previous case studies in the PAR change process and the two mini-inquiries, one with faculty and the other with administrators uncovered new knowledge. From this position, two main interconnected themes surfaced from the longitudinal study: 1) Change - a combined and concerted effort; 2) Why identity matters.

Change - a combined and concerted effort

To introduce a new design model based on contemporary online theories and 21st century goals across all programs is not an easy decision for any HE institution to make, let alone for a Chilean one where the connection to conventional pedagogical approaches is still strong. Researchers were aware both through knowledge and experience that a well-constructed plan would implicate all levels of the institution. The combined active engagement of all three levels in the roll-out and its ongoing evaluation was considered crucial to the transition and the sustainability of the changes being introduced (Charbonneau-Gowdy and Chavez, 2019). This transition involved making changes to behaviours and attitudes at each of these levels with no expectations of what would follow.

At the *macro level*, for example, administrators put aside their top-down attitudes to leadership and instead assumed a team-building perspective to decision making. Regular team meetings were held throughout the PAR period that involved individuals at all levels – including students. In these ongoing meetings, the nature of the plan was discussed, feedback was heard and acted upon. Online community sites set up for multi-level collaborative discussions were a further indication of this upper-level change in attitude.

These new roles and actions did not come easily to administrators. One senior manager shared the challenges of this adjustment in the following testimony: "For us, as an institution, as managers from the macro level there were challenges and difficulties, because first we had to convince ourselves that this is useful, that it benefits us. And that is not easy. [Next] you have to convince the group of people who are going to deliver the education later, that this is the way. Then you have to convince those to whom our efforts are directed...convince them that this was what was missing for the institution to take a leap in quality in its training process" (Macro-level interview, Nov. 2023). His words reveal the hurdles that are implicated in making major changes and more importantly the requisite for all to be involved, which he acknowledges as essential to effective change management.

Besides the actual changes made to programs, the empowering advantages of joint meetings and sites proved significant to many in the institution, particularly to *students*. As one student poignantly remarked: "I appreciate this instance [opportunity to meet], to be able to chat and know each other, and know that you are concerned [sic], to improve all that; that's important; it cheers you up, it is not like a platform where you login and that's it, like nobody cares, that's super important, it motivated you even more, so thank you for that as well." (Charbonneau-Gowdy and Galdames, 2021). These words reveal an awareness on the part of the student of the importance of being heard and being seen by upper and middle management as a key agent in the change process, an awareness that is tied to feelings of motivation and belonging - important prerequisites for change.

Teachers too played a vital role in the roll-out of the PAR changes. Over the 3-year period it is important to point out that teachers received consistent and regular support and guidance. This considerable guided support to adopt new strategies and roles, as well as the fact that their voices and opinions were being heard and acted upon in such sessions, may account for the active engagement teachers demonstrated. As one teacher remarked: "I feel that the accompaniment allows me to work with active methodologies so that my students can create, carry out and put into practice what they have learned" (Charbonneau-Gowdy and Galdames, 2023a). From this excerpt we can recognize the collaborative nature of the change process. The support from macro and meso level administrators played a vital role in this teacher's ability to put in place the new practices into her teaching, which she acknowledges has direct implications for the learning of her students. Her words are significant especially since for most faculty, the change being made to their teaching approaches was not insignificant. Yet, it is important to note that that over the period of the PAR, faculty's active engagement online with students went from 69% in 2021 to 90% in 2023.

Why identity matters

In our analysis of the results of the studies conducted over the course of the longitudinal PAR inquiry, a second overarching theme permeates the data – the critical need for recognition of identity in this educational space online. From an in-depth review of the large body of data that emerged from the longitudinal study, this theme is consistently evident. From these combined studies, findings clearly indicate an acknowledgement in the institution that a) human beings are central to this educational context and to the directions it was deliberately taking and b) that the kinds of identities individuals mediate in online spaces is critical to their learning and to the corresponding development that the institution's aims and goals promise. In other words, the conditions and kinds of activities and actions that existed in online spaces due to the three-pronged cross institutional initiative not only impacted the practices as well as cognitive and social development of individuals at all levels. Implicit in much of the evidence we uncovered was the fact that these same conditions also created a climate in which the kinds of identities that were being mediated mattered and were sustained.

Why does this identity mediation matter? The importance of identity and why it mattered in this change process is reflected in the co-researcher's decision to initiate the PAR at the institution in the first place. From a marginalized socio-economic background herself, her commitment to those who arrive at the institution seeking possibilities to alter the course of their lives, was deeply personal. The confidence she has in her identity as a senior administrator due to the openings she has had in her own life, convinced her that identities are dynamic and that with the right conditions for learning, students could also find ways to build new trajectories in their lives.

Why identity matters is further reflected in the course of action of the *administrators.* Rejecting the status quo of their organization's operations and instead choosing to mediate new identities as leaders was key to their support of the 3-pronged deep changes being initiated. Evidence of their evolving identity meditation is reflected for example in the testimony of one macro level administrator: "Before [prior to the PAR] I had the vision that studying virtually was studying with the computer and it depended on you. That was [then]. Today we believe that our management should aim towards generating social learning in our students" (Macro-level Interview, Nov. 2023). In these words, the manager reveals the evolving epistemological perspectives of he and fellow senior managers. The words underline the transition he sees in himself and fellow managers from viewing learning as an activity best accomplished alone in front of a computer where knowledge acquisition is solely dependent on the individual learners themselves, to a recognition of the importance of social learning in co-constructing knowledge.

In another excerpt from the data sets, a senior manager shares her insight into the identity transformations that occurred in management over the period of the PAR: " The implementation of things like this is not done authoritatively, in my opinion, but rather they have to be done in some way trying to convince that this model could also serve in the transformation of the type of student that we intended to train"(Macro-level Interview, Nov. 2023). In her testimony this manager explains the change in mindset required for organizations to evolve in terms of offering quality learning. She shares her view of the value of adopting a human-centred perspective rather than a top-down stance in successful organizational change. Through this kind of awareness uncovered in our analysis, we see how the identities of administrators are being transformed in the context of the study from narrow-thinking, autocratic, stubbornly stuck in conventional ways of doing to ones of openness, willingness to look at learning online differently, to value the human element in these spaces and to consider the long-term implications of management's actions. Indeed, these transformations in identity on the part of management were essential to making possible the deep changes to the online learning programs.

Why identity matters is attested to as well in the trajectory of *teachers* during the PAR project. Through the extensive support that was provided by macro and meso level management, teachers were guided in promoting learner-centred, agentive, and social interactive practices in their students. Indeed, over the course of the PAR project, the ongoing support and guidance teachers received led to considerable development of their teaching practices that reflected theoretically grounded new strategies and roles - in other words putting theory to practice. The transformations are evidenced in i) increased focusing on learner-generated content, ii) promoting of group work where students would co-construct new knowledge in their fields and think critically, innovatively, and metacognitively and iii) exploiting interactive tools to engage their students in building enriched professional relationships. As one meso level administrator observed of teachers' online activity: "Most of the teachers generate active participation, open questions in the forum, providing feedback and generating new challenges" (Field notes, Charbonneau-Gowdy and Galdames, 2023a). The transformation in teachers' practices observed by this administrator is representative of a clear change in perspectives that we uncovered on the part of a majority of faculty regarding ways to promote effective online learning.

These changes in practices were accompanied by identity mediation on the part of many teachers: from hesitation and being wary in the face of major adjustments to their teaching approaches that they were being guided to make, to more confident and engaged identities as online learning guides and facilitators. These changes in identity reflected in the transformation of teachers' practices and roles really mattered especially to students. They explain in a large degree the positive advances that were documented in overall student development. This development is implicitly evidenced for example in the decrease in attrition over the period of the longitudinal study from 44% to less than 33%.

As suggested by these statistics, why identity matters can most importantly be explained by *learners* in the institution. In the three case studies focussing on learners, the data revealed that many arrived in the institution with identities that could be naturally expected given their early education and social backgrounds. They either labeled themselves as 'good students' whose life circumstances had denied them opportunities, or "poor students", an identity that was mediated in the less than favourable systems in their early years of schooling (Bourdieu, 1998). Many were returning to formal education in hopes of a second chance – determined but insecure, hesitant, with feelings of inadequacy, indeed fearful that the circumstances they met there would again prevent them from realizing their hopes. In other learning contexts, i.e. in other online institutions and circumstances, those fears may have been realized. If that were the case, burdened by these kinds of pre-set identities, faced with spending long hours alone in front of computers, digesting content, completing exercises, interacting solely with machines, and proving their knowledge through multiple choice tests, undoubtedly many

would abandon their hopes and withdraw (Siemans, 2015). Yet, because they arrived at the particular institution they did where the PAR was being conducted, the outcomes were different.

Initially, the differences in this learning context were surprising and difficult to confront for many incoming students. The new ways of practice that they encountered caused fear among most students. As one meso level administrator reported: "This transformation was challenging for ourselves and for the accompanying tutors who also had to understand why we are doing this and from there [was needed] the communication with the student and to explain to the student… because the student, I am not saying all, but the majority initially rejected it" (Meso-level interview, November 2023). In this excerpt from our more recent inquiry, we see evidence of resistance that permeated both meso and micro levels of the institution at the outset of the PAR study.

Yet, exposed to opportunities to use technology tools to interact with others, to build knowledge and community in groups, to assume agency, i.e. to take control of generating content, to take on leadership roles in group work, to be critical/and or controversial, and to be heard and have their expertise be respected through assignments and group projects, many students were set on a trajectory that was empowering to their identities as learners. And this evolving identity mediation mattered. Ines, one of the student participants shared her views of what was happening in this context: "I feel that it has given me like those kind of tools, to be like a leader in my studies and in my field of work" (Galdames and Charbonneau-Gowdy, 2023b). Ines points to the evidence we uncovered of the kinds of identities that many students like her were assuming – as confident and emerging knowledgeable leaders. The feelings of empowerment that accompanied these identities allowed them to persevere despite the challenges of their personal lives, to seek new opportunities for advancement in their professional lives and to imagine new identities for their futures – that of motivated lifelong learners and successful professionals. Table 3 provides an overview of such evidence collected in a previous case study. This evidence illustrates the deep transformations made by students (Galdames and Charbonneau-Gowdy, 2023b). We understand these transformations in their learning and identities not only as lifelong but also life-wide and life-deep (Valdes and Zhou, 2007).

Table 3: Changes to learners' identities on leaving the institution (Galdames and Charbonneau-Gowdy, 2023b)

Observeable Changes in Students' Learner Identities	Evidence from Teachers	Evidence from Students
Acting in ways that reflect more capable, confident and self-assured in themselves and in their learning	"I think that in each of the existing instances we are seeing a change, a mutation, a migration, at different levels of intensity... So, this empowerment can be seen in all the instances. From the structure of the responses in a forum, for example, in the collaborative work as well, where you see a consolidation and a maturity."	"Honestly, yes, I feel like I make a contribution... you kind of live in the moment through the comments... the instance where you're learning. "Today I really feel much more capable. When I started studying, I said, this is not going to be my thing. So, if I got this far and I have nothing left, I can continue studying". "Oh, look at the confidence, the security and showing young people that if they work hard, they can do it.
Improved participation and analysis in reflection forums	"It is very comforting to see how students broaden their analytical skills by acquiring new learning" (Teachers' questionnaires, January 2023).	"The truth is that when my peers respond, I feel very good... it's what I think from my point of view and that others see it as I see it, I think it's great".
Increased engagement with their learning in all learning experiences	"...and there one sees this maturity that is acquired in the different interventions, in the way of interacting. These are aspects that go beyond knowledge, empowerment."	"Well, I'm committed to studying, so my goal is to do well and be committed. "I want to continue studying... at that level of continuing to advance as a woman, as a mother, etc.".
Actions taken as researchers and agents of their learning	"Through the thematic forums students should reflect, give feedback to peers and generate collective learning, which is very important in this mode of study." "They have developed the capacity to learn quickly and to provide solutions to the problems that arise, I see that they are becoming more and more empowered in their territorial contexts."	"I feel amazing. I am at a stage where I want to study and I like it, I am learning things that I thought I would never learn. The truth is, I have changed... I am a mature woman who does her best to make things go well, I am focused on my future and on getting my degree." "So, there is also feedback from ourselves in that process and that is in the whole group. So, I think that's why we all got good marks."
Increased empathy with peers and signs of assuming leadership roles	"I have been able to see the development of skills such as leadership, problem solving, empathy, tolerance, goal-oriented teamwork, can be appreciated through the synchronous classes with their stories and also in the collaborative work"	"I have developed patience, why not say it too, and in a way empathy with others. I had a difficult time when my mother passed away. Then other colleagues too, others were parents, and we learned to be empathetic and to put ourselves in the other person's place." "I feel that it has given me like those kind of tools, to be like a leader in my studies and in my field of work." "I feel that I no longer have that fear, that fear of saying what I think, I feel calm and I encourage others, there is no need to be afraid of success."

Responses to the research questions

Interwoven in our analysis and the themes that emerged are responses to the research questions that framed the longitudinal study.

***RQ1**: In what way do individuals at various levels of the institution perceive the changes being initiated in across all online programs in the institution?*

It was clear from our findings that at the outset of the change initiative and at all levels of the institution, there was a certain fear, various degrees of resistance and skepticism in view of the changes to programs and practices being discussed. Senior leaders were well aware of the challenges and difficulties they faced. They acknowledge that change involved the need to convince themselves, then those in operations, i.e. operational administrators, and teachers and importantly, students that the new direction was useful and beneficial. In expressing his reaction to such a challenge, one senior administrator remarked: "that [meeting these challenges] is not easy". At the same time, of those involved at the *meso* level who were responsible for operationalizing the changes while recognizing the clear necessity for all levels to be involved and engaged in the new direction, many initially were skeptical of whether it was feasible. As for teachers and students on the one hand they seemed to welcome the new openness of senior managers to include them in collaborating in the establishing of a new direction and to be heard. Yet, when it came to actually accepting what these changes involved, many expressed fear and insecurity about "*why we are doing this*".

***RQ2**: What implications did these changes have for their roles and perspectives of learning?*

Along with new directions in online learning practices that were emerging, individuals at all levels foresaw that their roles would change dramatically as well. For teachers, for example, many expressed concerns that their long-held roles as content developers and information distributers, responsible for motivating students to absorb knowledge and provide prescriptive answers to questioning, were being challenged. According to our analysis, many realized that the new climate of learning would force them to abandon these roles and their visions of learning as an autonomous process where they themselves took little initiative to engage with students in virtual classes or online spaces. Instead, they were being called upon to redirect their perspectives of learning to a social interactive learner-centred process where their roles involved acting as active and engaged guides and facilitators.

Learners' roles and perspectives were also called upon to change in reaction to the new ways of learning that they were confronting in online spaces. Instead of passive recipients of information, data clearly suggested that many students took on roles as key agents in their learning development and keenly aware of the importance of social collaborative learning to their learning development and perspectives. Students spoke of assuming leadership roles among their peers, of co-constructing knowledge in group work and of the importance of adopting critical thinking and controversial stances in their learning spaces. And in terms of their perspectives of learning, many projected a long-term view, of the desire for further development and bore witness to the value they saw in lifelong learning.

***RQ3**: What was the impact of the changes made on the identities of these individuals?*

These new roles reflected the emerging new identities of individuals that were being mediated at all levels. For senior managers and administrators, their new identities mirrored increased openness and willingness to listen, to evolve and learn, to respect and be active in community with others at the various other levels and to envision through critical and innovative dialogue a better future trajectory for the institution and each other. Evidence of teachers' evolvement in terms of their identities emerged as well – as engaged guides and facilitators of active learning online and of the co-construction of knowledge among learners. Increasing numbers portrayed themselves as newly confident and collaborative in virtual spaces, and positive proponents of debate and critical thinking. Students' evolvement in terms of their identities as learners were especially noteworthy. As summarized in Table 2 and also in the report in our earlier study (Charbonneau-Gowdy and Galdames, 2022) strong evidence of learners evolving identities from insecure, fearful, and marginalized in online spaces to 21st century learner identities - empowered, self-directed, team-player, strong communicator, critical thinking, innovative, collaborative, confident and invested not only in their present learning but in envisioning their future identities as well. Participants in this group of learners for example shared their aspirations for a future of lifelong learning and their imagined identities as successful ever-developing professionals.

***RQ4**: How does the experience of the changes made and its sustained impact on learners' identities and learning in the short and long terms predict the nature of online programs in this institution in the future?*

It was evident from the data generated at the end of the 3-year period that the encouraging positive changes that emerged over the period of the study as a result of the institutional PAR project would have an impact on its further directions. Senior leaders and administrators expressed significant positive reaction to the overall effectiveness of the changes in their institution - the impressive learning results that were being recorded, the encouraging evolving profiles of graduating students and the overall engagement of individuals across the institution in community building, not to mention the decrease in attrition rates. These reactions opened up discussions of ways to continue to enhance the changes that had been made over the 3 years and that had now become part of institutional policy and to introduce other practices and tools as well, including AI, that could support continued development. This evidence not only speaks to the sustainability of the changes that were initiated in the context of the PAR project. They also predict the future positive trajectory the institution is envisioning to ensure growth and continued effectiveness in their online learning programs.

5. Discussion

The solid evidence from the combined mini case studies conducted in relation to the PAR longitudinal project provide insights into the power of multi-level institutional efforts for influencing human development. Picciano's (2017) well-grounded Multimodal Model provided the structure for the changes that were instigated online. Margaryan, Bianco and Littlejohn's work (2015) and its ten guiding principles (Table 1) for developing and using an effective ID, guided us in connecting the contemporary e-learning theory behind this model to the actual approaches and practices of teachers in their respective courses online. At the same time, the evidence that was unpacked from this large study and the widening of our gaze in the process of the PAR have led us to conclude that applying this theory and scholarship alone could have had disappointing results were it not for a) the collaboration of stakeholders across the institution and b) the importance that was placed on the identities of those involved.

Norton's (Darvin and Norton, 2015) concept of 'investment' to explain why learners when offered opportunities to exercise agency through interaction and knowledge construction with others, engage actively in the activity at hand, can be extrapolated to include not just learners but all members of a learning community. The efforts made in the context of the 3-year PAR project to build community in the institution (Garisson et al., 2000) were not just limited to promoting new contemporary teaching/learning approaches framed by 21st century goals and e-learning theories, supported by social learning-based technologies. Our findings indicate that the investment in sustained change that was evident throughout the institution was clearly also due to a combination of a) a concerted effort to build community through multi-level dialogue supported by powerful technology tools and b) to have individuals at all levels of the institution play an agentive role in the changes being initiated. Many recent accounts in scholarship from the period of the pandemic connect the absence of this kind of concerted effort and the agency of multiple levels of an organization to the disturbing challenges they experienced online as a result (Migocka-Patrzałek et al., 2021).

Engell and Coll's (2021) model (see Figure 3 above) have framed our understanding of the sometimes dramatic and impressive development we witnessed in the identities of incoming learners in the institution and as they progressed through their programs (Table 3). The model can also serve to explain the changes in identities we uncovered in individuals at other levels of the organization - for example, faculty as described above and the transforming of senior and middle management's roles and identities. This group's transformation process from identities as top-down decision makers to those of collaborators and cross-institutional team builders with an openness to trust and move in new epistemological directions, can be explained by several of the elements of the model.

Reflecting on these theories and the strong evidence generated in our longitudinal study has led to a framework for the effective institutional changes that were installed over the 3 years and an accompanying taxonomy.

Over the course of the longitudinal study and through the analysis of our findings, we have understood that the key to sustained change lies in the successful connection of theory to 'real' practice. Our framework (Figure 4) underlines the essential components of the theoretical changes made to our institutional online programs – that the changes in learning be identity-centred, that these changes be a multi-level collaborative process, that an effort to build community across the institution and program areas be a critical focus and that the theoretical basis of the ID of programs, the pedagogical perspectives reflective in teaching and learning practices and the use of technology be aligned with 21st century goals and contemporary e-learning practices.

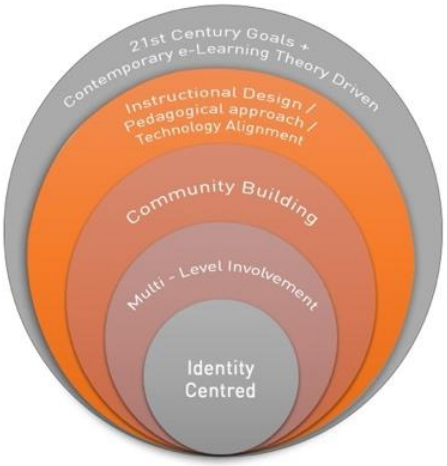

Figure 4: Framework for the institutional change to effective online learning

The taxonomy in Table 4 outlines the essential, practical steps that were taken that connected this framework to practice and resulted in sustained change and quality online programs made over the course of the PAR project. These steps involved institutional policy documents and macro/meso/micro level stakeholders. Within each of these categories lie key considerations that together when followed have been shown in the study to guide the ongoing development in the effectiveness of online programs and deep changes to learners and their identities.

Table 4: Connecting theory to practice in institutional change

Documents	Macro Level Authorities	Meso Level Academic Administrators	Teachers	Students
Educational projects and regulatory frameworks explicitly declare their intention to prepare students to respond to the learning demands of the 21st century, to generate educational experiences that favor the construction and reconstruction of their identities, as well as the educational theories that support such learning.	Collaboration is presented as a fundamental axis of management. When designing, creating, thinking and/or updating regulatory frameworks or institutional processes and strategic decision-making, the whole educational community is actively involved through various instruments such as: i) questionnaires; ii) communications; iii) discussions; iv) awareness and training sessions; v) workshops. The results of these tools are reflected in the new changes or decisions adopted by the institution.	It is critical that the meso level shares in the establishing of new improvements, new ways of doing or proposals that will be implemented. They participate in its design and implementation through collaborative discussion about the project to be implemented, taking an active role with teachers and students in this execution. Suggested collaboration to include the following: i) awareness-raising activities and information; ii) discussion sessions; iii) joint implementation planning; iv) implementation monitoring activities; v) ongoing evaluations of the implementation; vi) the collection of feedback from key actors in the process; vii) adjusting the implementation, if required.	Practical realization of theory into practice requires planning and designing systematic and permanent teaching support. Support provided includes guidance on adopting a social learning model to practice and be clearly reflected in each virtual classroom session, not only through pedagogical resources used such as: i) reflective forums; ii) collaborative activities and projects; iii) synchronous classes, iv) collaborative evaluations, but also through the underlining intention of the interaction generated by teaching practice. Support allows for and guides an evolution in teaching roles and practices.	Experiences designed for students to develop this kind of learning and impact their identities have social interaction as their key axis along with an engaged teacher presence and the co-construction of learning. The pedagogical and evaluative resources of virtual classrooms facilitate this intentional interaction with the teacher and their peers, where acts of recognition, sharing experiences and points of view, and dialogue are permanently present. Promoting an opportunity to generate an online community, for example in discussions with institutional authorities, with academic administrators and among peers, is important.

This visual theory-based representation and its practice-based tool highlight the important elements in the process initiated in the institution. In our minds, they can serve two purposes. Firstly, they are an invitation to others who dare to make broad changes to e-learning practices in their own institutions to look more deeply at their contexts 'with different eyes'. Secondly, they offer further support to the critical role that awareness of identity and its dynamic development play in changes to any educational context, including online ones.

6. Conclusion

While the combined results of this study including the framework and the taxonomy guide might offer potential insight for promoting dialogue, we also cannot negate its context-specific nature nor that the findings are drawn from relatively early stages of the change movement in the institution – i.e. in the first 3 years. Still, we are strongly convinced that the theories and goals that were collaboratively put into practice and that supported the development of a multi-level learning community within the institution resulted in some impressive findings both in terms of learning and identity mediation. This mediation was evident not just on the part of many learners, but individuals at other levels of the institution as well – leaders, administrators, and teachers. In our view, the implications of these findings send a clear message to e-learning researchers that we know relatively little about how our technology-supported contexts impact human beings in these virtual spaces. We believe strongly that more research in this area with an eye to the future is vitally important especially as we advance so quickly head long into the use of AI. For governments, policy makers and institutional decision makers the results of this study are a confirmation that changes that can have broad development effect on society *are possible* through online learning programs. The caveat is that the development that is promised and sought in these programs, especially for those who need it most, will only come from a concerted effort to attend to human beings in these contexts as opposed to simply the tools and systems.

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