Students' Readiness for Blended Learning in UK higher Education: A Service Ecosystem approach

Wakenshaw, Susan[a] Agg, Chloe[b] Yang, Lifan[a]

University of Warwick, UK[a]
Imperial College London, UK[b]

Corresponding Author's Email: Susan.Wakenshaw@warwick.ac.uk

KEY WORDS: Blended learning, service ecosystem readiness, student perspective, higher education

ABSTRACT

Blended learning has become a standard approach in higher education post-Covid, but its effectiveness and learning outcomes are significantly impacted by student readiness. Existing research focuses only on students' attitudes towards blended learning or teachers' readiness. This study employs a service ecosystem perspective, examining students' broader cognitive, emotional, interactional, and motivational readiness within the learning ecosystem.

Using qualitative methods, semi-structured interviews with ten Chinese-origin students at the University of Warwick were conducted to explore their blended learning experiences. The research draws insights from both organizational and individual levels, unveiling factors influencing students' blended learning readiness. Moreover, it delves into the implications of cognitive, emotional, interactional, and motivational readiness within the UK higher education ecosystem.

The study enriches the theoretical understanding of students' blended learning readiness within the learning ecosystem. Managerially, it highlights the need for a refined two-way feedback system to align with students' expectations. Collecting detailed online learning records, such as video engagement and comments, enables tailored content creation. Leveraging technology enhances interactivity; teachers can share relevant short videos to quickly introduce course concepts. Technological advancements can also optimize platform connectivity, resolving issues promptly and enhancing communication among stakeholders. At the institutional level, universities should offer IT training for teachers and management, coupled with teaching and learning guideline development. This multifaceted approach

ensures preparedness for blended learning, fostering an effective and engaging educational environment.

LITERATURE REVIEW / RATIONAL

Blended Learning: The Fusion Of Pedagogical Frontiers

In the realm of education, the concept of blended learning emerged as a harmonious fusion of traditional face-to-face instruction and the burgeoning possibilities of digital technology. Graham (2006) eloquently described blended learning as the convergence of two prototypical learning environments. On one hand, the timeless tradition of face-to-face learning, rooted in history, and on the other hand, the dynamic landscape of distributed learning environments, fueled by technological advancements, opened new avenues for communication and interaction. The essence of blended learning was not a revolutionary educational theory, but rather a fluid concept that organically integrated online and traditional methods within the evolving landscape of information technology and curriculum teaching (Lai, 2020).

The realm of blended learning was a realm of multiple definitions. Graham, Allen, and Ure (2003) presented three facets of blended learning: combining instructional modalities, merging instructional methods, and fusing online and face-to-face instruction. Whitelock and Jelfs (2003) offered additional definitions, encompassing the integration of traditional and web-based online learning, the conjunction of various media and tools in e-learning, and the amalgamation of diverse teaching methods regardless of technological use. Meanwhile, Kerres and De Witt (2003) emphasized the blend of teaching methods and delivery frameworks as distinctive elements. Driscoll (2002) aptly pointed out the varied interpretations that defined blended learning, illustrating its wide-ranging potential yet to be explored. Hofmann (2001) shed light on a hidden meaning – that instructional designers dissect learning programs into blocks, carefully choosing mediums to deliver content to students.

The outbreak of the coronavirus pandemic in 2019 transformed the educational landscape, prompting a shift towards blended learning to enhance learning quality (Kintu, 2017). This crucial moment directed heightened attention towards blended learning, and scholars redefined it, asserting that a mere juxtaposition of offline and online learning fell short of capturing its true essence (Zhang et al., 2020). In response to the rise of the internet, the

concept evolved to encompass "teaching and learning contexts based on mobile communication devices, online learning environments, and classroom discussions." The emphasis shifted towards fostering personalized, engaging learning experiences that facilitated genuine participation (Zhang et al., 2020). In contemporary blended learning models, technology and media collaborated to cultivate the most effective learning environment (Hamzah et al., 2022). These tools facilitated the distribution of learning materials, group and individual activities, synchronous and asynchronous events, and tailored content delivery to increase motivation and completion rates (Owston, 2018; Hamzah et al., 2022).

The 'Why' Behind Blended Learning

Over the years, blended learning gained prominence in academia, emerging as one of the top ten trends in knowledge conveyance (Graham, 2006). The growth in publication output became an indicator of the subject's development, reflecting an increased accumulation of scientific knowledge (Qi, Zhou, & Shek, 2020). The year-by-year distribution of blended learning publications revealed a consistent upward trend, showcasing its rising significance (Yan and Chen, 2021). Graham (2006) foresaw the gradual merger of traditional face-to-face learning with distributed learning, projecting a future where blended learning would dominate as the primary mode of learning.

The adoption of blended learning is underpinned by multifaceted reasons that resonate across various perspectives. Chen (2019) articulates a fundamental shift in educational paradigms, suggesting that blended education offers unique advantages not replicated by conventional models. This entails the revitalization of classroom teaching methods and the amplification of teachers' pedagogical prowess. By utilizing information technology platforms, teachers curate course resources, motivating students to engage in pre-class preparation and post-class review. This engenders a proactive learning approach, cultivating independent learning skills, creativity, and teamwork aptitudes in students (Zhang et al., 2020). Osguthorpe and Graham (2003) further underline the value proposition of blended learning, including enriched pedagogical content, increased social interaction, knowledge accessibility, personal empowerment, financial efficiency, and adaptability. These incentives are mirrored by Graham, et al (2003), who cite improved pedagogy, heightened learning flexibility, and cost-effectiveness as key drivers propelling the adoption of blended learning.

Research Gaps In Blended Learning: Navigating Uncharted Territories

However, amidst the benefits of blended learning, a common misconception emerged that it inherently outperformed other learning approaches (Lu, 2021a). The strength of blended learning's integration lay in its potential to combine the advantages of both online and offline instruction, creating a synergy that optimally served learners (Zhang et al., 2020). Yet, as in any dialectical relationship, strengths were interwoven with limitations (Moyer, 1999). For instance, the emphasis on 'free' courses from prestigious institutions such as Coursera might not necessarily align with individual needs and goals (Markovic, 2018). Lu (2021b) cautioned against underestimating the importance of face-to-face interaction and emphasized the need for deeper research into students' preferences and experiences.

Critical questions arise in unison with these challenges. The realm of blended learning inadvertently casts students in the shadows, with the focus often oscillating between technology, instructional models, and educators. This omission beckons the exploration of students' readiness and preferences within the blended learning landscape. The rapid transition to online education during the pandemic unveiled an unprecedented opportunity to study students' preparedness for blended learning (Scherer, Howard,Tondeur &Siddiq, 2021).

In this evolving narrative of blended learning, the fusion of historical foundations and technological frontiers paints a picture of continuous exploration and adaptation. The allure of blended learning lies in its promise of enriching educational landscapes, yet the gaps and uncharted realms beckon scholars and educators alike to embark on a journey of discovery, seeking a deeper understanding of students' varied readiness and the multifaceted nuances within this transformative paradigm. In the quest to bridge these gaps, an eco-system approach, resonating with the philosophy of service ecosystems, emerges as an illuminating paradigm. This perspective emphasizes holistic integration, embracing actors, beliefs, and rules to co-create value (Vink, Koskela-Huotari, Tronvoll,, Edvardsson, & Wetter-Edman, 2020).

APPLYING ECOSYSTEM THINKING TO LEARNING AND TEACHING

Ecosystem Approach To Learning And Teaching

Frielick (2004) introduces a paradigm for teaching and learning as an ecosystemic process, transforming information into knowledge. This approach envisions the intricate interactions between teachers, students, and subjects, embedded within an environment that influences the quality of learning outcomes. This perspective extends beyond traditional constructivism, delving into a new cognitive and learning ecology termed "activism" (Varela, Thompson, and Roche, 1991; Davis et al., 1996). Frielick's ecological model of learning/teaching model (Figure 1, Frielick, 2004, p.330) integrates insights from phenomenological work (Marton and Booth, 1997; Prosser and Trigwell, 1999), Bigg's constructive/systematic alignment methodology (1999), Ramsden's relational vision (1987), and Batesonian epistemology, resulting in a comprehensive teaching/learning model. While Frielick (2004) contends that deep learning occurs through face-to-face interaction with experts, he acknowledges e-learning's potential to facilitate skills acquisition at lower levels of the model. Despite concerns about the internet's accessibility to unreliable information (Dreyfus, 2001), Frielick emphasizes its significant role.

Service Ecosystem Thinking

Wakenshaw and Harvey (2020) applied the notion of value co-creation to achieving constructive alignment for module development, In service literature, The latest discussion of value cocreation in the S-D logic community is from a service ecosystem perspective proposes that value is co-created through actors' service provision and exchange via resource integration coordinated and constrained by actors' institutions and institutional arrangements in contexts within a service ecosystem (Vargo & Lusch, 2016). Lusch and Vargo (2014) defined service ecosystem as a "relatively self-contained, self-adjusting system(s) of resource-integrating actors connected by shared institutional arrangements and mutual value creation through service exchange" (p.161). Service exchange entails the exchange of the competences and skills for the benefits of the beneficiaries (Vargo and Lusch, 2004).

Vink et al. (2020) advocate for applying a service ecosystem perspective, building upon Vargo and Lusch's concept of "relatively self-contained, self-adjusting systems of resource-integrating actors" (Vargo and Lusch, 2016), which emphasizes dynamic value co-creation. This approach offers insights into participants' roles in value co-creation. Chandler et al. (2019) note that service ecosystems exhibit energies beyond individual control, yet participants can influence their evolution. A service ecosystem perspective aids in understanding participants' efforts for long-term change.

From this then, ecosystem thinking applies to both learning and service contexts, fostering holistic understanding, adaptability, and effective collaboration. It recognizes the interdependencies among components, guiding more comprehensive and responsive approaches.

Actor Ecosystem Readiness

As service delivery involves multiple participants, their readiness to collaborate becomes crucial (Danatzis,, Karpen, & Kleinaltenkamp, 2022). Without proper preparation, service streams can break down, leading to disengagement, dysfunctional behavior, and stress. Participants collectively form an interdependent network within a service ecosystem (Vargo and Lusch, 2016). To function as effective resource integrators, their readiness must be enriched.

Danatzis et al. (2022) introduce Actor Ecosystem Readiness (AER), a multi-level theory based on service ecosystems. AER focuses on human assets—cognitive, emotional, interactive, and motivational—that facilitate cooperation and resource use among actors. Understanding participants' readiness in these dimensions provides insights into advanced processes. A substantial framework illustrates how AER dimensions interact, progressively influencing ecosystem outcomes as seen in the paper. This concept of readiness to engage in a service ecosystem can therefore also be applied to student and staff readiness to engage in blended learning.

STUDENT READINESS FOR BLENDED LEARNING: A MULTIDIMENSIONAL ANALYSIS

In the realm of blended learning, where traditional and digital educational components intersect, the pivotal participants are university students. Their preparedness for the multifaceted challenges and opportunities presented by this learning approach is of paramount importance. To comprehensively understand the readiness of university students for blended learning, this literature review employs the four micro-dimensions – cognition, emotion, interaction, and motivation – from the Actor Ecosystem Readiness (AER) framework.

Cognitive Student Readiness

The translation of macro-thinking into micro-thinking, as proposed by Lacobucci (1998), aligns with the AER framework and underscores the importance of cognition within a service ecosystem. Students' cognitive preferences in favour of practicality and usability over theoretical aspects resonate with this perspective. Notably, cognitive research plays a significant role in multi-participant services (Danatzis et al., 2022), offering valuable insights into cognitive readiness.

Cognitive readiness is manifest in several competencies. Decision-making ability, essential for students in selecting learning tools, resources, and tutors, is critical (Weller, Moholy, Bossard, & Levin, 2015; Okaz, 2015). The ability to clarify objectives and processes is paramount, especially in reconciling differing goals between students and teachers (Locke and Latham, 2006; López-Fernández, Gordillo, Alarcón, & Tovar, 2021). Mental adaptability, the capacity to navigate changing circumstances and master new tools and strategies, is crucial for effective participation in blended learning (Garrison and Kanuka, 2004; Oliver and Trigwell, 2005).

Emotional Student Readiness

Emotional processing is intrinsic to behaviour and psychological adjustment, influencing motivation, learning, coping, and decision-making (Eslinger, Parkinson, & Shamay, 2002). Students' achievement emotions are intertwined with motivation, learning strategies, and academic success (Pekrun, Goetz, Frenzel, Barchfeld, & Perry, 2011). Emotional readiness is characterized by emotional regulation and empathic attention (Danatzis et al., 2022).

In the context of blended learning, managing personal emotions through learning strategies and relevant knowledge is vital (Bortoletto and Boruchovitch, 2013; Enríquez, Ramos, & Esparza, 2017). Empathic attention, understanding and reacting to others' emotions, facilitates collaborative learning (D'Errico, Paciello, & Cerniglia, 2016). Emerging research explores using technology to capture students' emotions and enhance emotional communication (Happy, Dasgupta, Patnaik, & Routray,2013).

Interactional Student Readiness

Interaction is at the heart of multi-actor service delivery, spanning digital, social, and physical domains (Bolton, McColl-Kennedy, Cheung, Gallan, Orsingher, Witell, & Zaki, 2018). Interactional readiness encompasses three competencies crucial for students' success in blended learning.

Relational competence involves building and maintaining relationships with teachers and peers (Hansson, Jones, and Carpenter, 1984; Sidelinger and Booth-Butterfield, 2010). Interactive involvement, driven by class atmosphere, personal motivation, and teaching methods, contributes to active participation and engagement (Abbasi and Mir, 2012; Sidelinger and Booth-Butterfield, 2010). Institutional adaptability enhances students' ability to navigate diverse institutional contexts, contributing to the evolution of the service ecosystem (Danatzis et al., 2022).

Motivational Student Readiness

Motivation, a complex determinant of behaviour, encompasses various dimensions (Vinacke, 1960). Beyond achievement motivation, the concept of wants, outcomes, and self-efficacy expectations shape students' motivation in blended learning (Kanayama and Nasukawa, 2008; López-Pérez et al., 2011; Danatzis et al., 2022).

Wants, denoting personal needs and goals, drive students' engagement with blended learning (Bagozzi and Dholakia, 1999). Outcome and self-efficacy expectations influence satisfaction and learning outcomes, particularly given the diverse cognitive abilities of students in blended learning environments (Wakefield, Carlisle, Hall, & Attree, 2008).

In essence, university students' readiness for blended learning is a multidimensional construct, encompassing cognitive competence, emotional regulation, interactional proficiency, and motivational factors. Understanding and enhancing these facets are pivotal for fostering successful and enriching blended learning experiences.

AIM AND OBJECTIVES / RESEARCH QUESTION(S)

Building on the AER model, this research explored, described and constructed a framework of student readiness for blended learning in engineering education. The following research objectives were achieved. First, the researchers reviewed and described the existing literature on the research on student readiness for blended learning. Second, a new

framework of student readiness for blended learning was developed by applying the service eco-system approach.

METHODOLOGICAL APPROACH

The purpose of the research was to understand and describe and develop a framework for student readiness for blended learning. Therefore, interpretivism and qualitative research methods were utilised in the research, by which information can be processed and analysed for interpretations of real phenomena (Alharahsheh and Pius, 2020). The data was collected by interviews. 10 full-time MSc students were interviewed all of whom have recently studied in UK universities and have experiences of the blended learning experiences during the pandemic.

During the interviews, the course of the conversation was largely set by the interviewee, so the goal of the interview is to obtain a first-person account of a particular area of experience (Thompson, Locander, & Pollio, 1989). The interviewer does not pre-set the questions to be asked in the interview, except for the questions that introduce the dialogue at the very beginning. What makes this format different is that for the interviewer, the aim is to create a dialogue with the interviewee, rather than simply to ask and answer questions. As described by Fournier (1998), it is a reasonable goal to get a complete picture of the Informants' experience and readiness for blended learning. This method of interviewing extracts meaningful information from the interviewees' descriptions of their real experiences, without pre-determined answers, but with certain interview lineaments. This study uses Applied Thematic Analysis (ATA). ATA is an inductive analysis framework for qualitative research which has been developed by Guest, MacQueen, and Namey (2012). Once the data had been collected it was divided into categories, each with a theme, and from the specific interviews the content related to each theme was extracted and summarized; the novel ideas and suggestions involved in the data were highlighted in the analysis process to help achieve the research objectives.

FINDINGS

The data was collected using interview method, with a total of ten students, all of whom were university students of Chinese origin. Each participant described in detail their rich blended learning experiences in their interviews. Themes in the data were identified and are discussed below;

Theme 1 Cognitive Experiences / Readiness

Students showed:

- A preference for in person seminars and lectures based on the classroom atmosphere and the inclusion of interactive elements / physical props as well as the ability to gain a rapid response from peers during and after the session.
- Dislike of live online learning due to network/internet unreliability and reduced quality of communication
- Perceived benefit that online learning is convenient, including playback/replay [one student mentions using this to reduce anxiety], and a wealth of additional resources.

Students compared their online and face-to-face experiences with most participants describing the face-to-face experiences as optimal. Some technologies could make the f2f teaching more live and engaging;

> *"Just listening to the lesson can be fatiguing and this way I can clear my head and settle into the lesson quickly".*

Participants described many physical resources that can be used in the classroom, such as display walls, test books, props for games, etc.

Participants described positive experiences regarding the components of online teaching which brings convenience to learning (Sit, Chung, Chow & Wong, 2005). As several respondents mentioned, blended learning saves commuting time giving them more time to reflect academically and complete additional learning content. These elements mentioned included course recording and playback function;

> "*I need to replay the videos repeatedly to watch until I learn the knowledge I don't know in the course, otherwise I feel anxious."*

In addition, pre-learning, multimedia-assisted learning, conference bookings, task submission and feedback, a wealth of learning resources and links to external teachers or corporate staff were all cited as facilitators that could be offered online.. Overall, the important function of the online component is to provide additional support for face-to-face learning (Horspool and Lange, 2012).

It was revealed that the tutors should give students clear guidelines for students.

> *"That is something like a guideline in which the teacher can specify which parts need to be done online or offline and which parts can be done in a mode of choice."*

A uniform and clear policy/plan can reduce misunderstandings. Howard (2007) points out that communicating to students 'what we want them to learn' and 'how we want them to learn what we want them to learn' can be helpful to teaching.

Participants also described negative experiences of online learning/teaching such as class atmosphere, quality of delivery, tutors not seeing students' response, distraction and so on. Technical issues such as network issues were a focus of anxiety for online learning/teaching (Alexander, Truell, & Zhao, 2012).

Participants expressed issues of dividing the teaching into online/in person without clearly constituting blended learning, one student had profound experiences with this;

> *"Some teachers will put pre-recorded lecture videos on the system for students to study on their own in order to save time, and then go offline to participate in group tasks and practice. Although this reduces the teacher's workload, there is a massive reduction in interaction and communication between teachers and students, and the pace of teaching is accelerated. Very often students do not acquire sufficient and relevant theoretical knowledge To practice offline, which can create a severance between online and offline and therefore Cannot be called blended learning in the true sense of the world".*

Cognitive readiness also relates to student and staff capacity to use the platform. The multiplicity of current online platforms results in inconsistencies and challenges of navigability, with resources/activities taking place on different platforms, and these differences not being uniform across modules. Similarly, differences in layout choices between modules results in inconsistency. This makes it challenging for learners to quickly locate the resource/activity required.

- Relevance/timeliness of "courseware"/resources considered to be of greater importance than the mode of its delivery.

Theme 2 Emotional Experiences / Readiness

Overall, emotions toward blended learning were positive as expressed by the participants. This type of learning helps teachers to inspire and guide students in the process of mixing online and classroom teaching, reflecting the creativity, initiative and motivation of the student, making the training more modern, informative and intelligent, and enabling students to have a richer emotional experience (Lai, 2020).

Students' emotions are affected by operational details and people. For example, students can become irritated when the learning platform sends too many reminders or is not easy to

operate. Receiving too many emails can also increase students' feelings of anxiety. Online interactions with teachers and classmates are influenced by factors such as internet reliability which can deepen students' desire for offline communication.

During the discussions students did not focus on their emotional reaction or readiness for blended learning in as much depth as other forms of readiness. This in itself reflects engineering students' general lack of readiness to reflect on their emotions regarding their education. This may in turn impact students' emotional readiness for blended learning.

Theme 3 Interactional Experiences /Readiness

Students showed:

- Learning mode is considered less important than the attitude and experience/skills of the teacher and fellow learners.

Most participants felt that it was not the teaching mode that influenced readiness, learning effectiveness and personal emotions; but the skill and attitude of the teacher and the character of the group members, which were to some extent related to the culture of different countries/regions. It was revealed that students think teachers should be more considerate of students' feelings and receptiveness.

Experiences of classroom teaching were positive.

> "*In the classroom, communication with my classmates is much quicker.*"

Some participants noted that teachers conveyed more positive emotions when teaching face-to-face than online. The personal attitude and mood of the teacher can influence student enjoyment and acceptance of lessons, with most respondents finding teachers tend to be more positive and enjoyable when face-to-face.

Theme 4 Motivational Experiences /Readiness

Motivation and self-starting are important for successful use of blended learning by students as the greater autonomy offered by asynchronous online learning came with a greater requirement to plan and engage. In this area students showed:

- A preference for activities which required in person attendance or personal interaction such as field trips, practical/hands-on content, game-based sessions etc.

The main factors driving/motiving students to learn revealed in this study included fun and practical nature of the course. For a course to have fun, the response of the tutor is important;

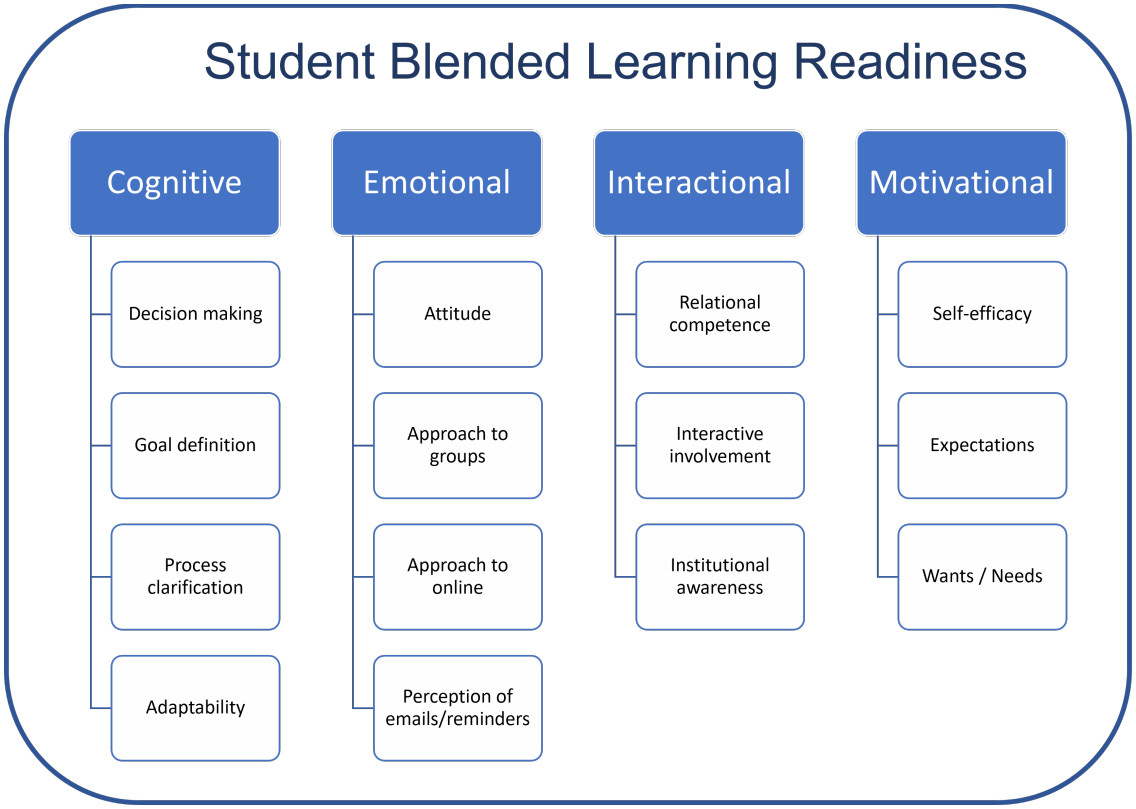
"*One teacher responded positively to my questions during the course, and he would share interesting ideas with me. … I found him interesting and specifically chose him for other courses.*"

Game-based or hands-on sessions can make the course interesting for students and are seen as the 'highlights' of the course. These 'highlights' convey course concepts and at the same time stimulate interest in learning.

All participants expressed a positive attitude about inclusion of more practical content in the curriculum to meet the needs of future careers. For example, they would like to listen to lectures by industrialists, participate in more practical industry cases or go on field trips to companies.

The findings across all four themes are summarized in Figure 1 below:

Figure 1. Student Readiness Factors



DISCUSSION

In this research, we investigated student readiness of blended learning from service ecosystem approach. The cognitive abilities required for student readiness of blended learning in the service ecosystem include decision-making capability, the abilities to clarity goals, processes and mental adaptability. In our research, convenience is the key factor for positive student experiences. Therefore, students are willing to choose blended learning mainly because of its flexibility (Tang and Chaw, 2013). The importance of technological support was important to facilitate student blended learning and enhance their learning experiences. De L'Etraz (2010) highlights the ability of digital tools to help build communities across borders and create a wider platform for communication than face-to-face. The possibilities for students to learn anytime and anywhere are greatly increased through the support of technology (Lancaster, McQueeney, & Van Amburgh, 2011). In addition, a wider range of learning materials can help students deepen their understanding of course content, such as multimedia (Mayer, 2005). These factors make students enthusiastic about blended learning. The clear objectives and guidelines for the course /program are crucial for student experiences and their readiness for blended learning. Due to the diversity of students (Hanassab, 2006), their understanding and needs in relation to the learning objectives and processes of the course sometimes deviate from what is communicated by the teacher. This is particularly noticeable when learning online.

Students' readiness to interact includes three basic competencies: relational competence, interactive involvement and institutional adaptability. Our research has revealed that online learning weakened their relationships with teachers and classmates. The closed cameras and screen locking reduced students' willingness to communicate. For learning sessions that require interpersonal communication, such as lectures, group discussions and tutor meetings, taking place in a classroom is a more effective option. As Garrison and Kanuka (2004) say, classroom learning allows students to engage in spontaneous verbal communication in a permanent physical environment. Scholars agree that the classroom provides an authentic, meaningful interaction between learners and teachers that cannot be replaced by online learning (Tang and Chaw, 2013).

Our research also revealed one challenge encountered by participants was to form relatively effective collaborations with others in an online environment (Starenko, Vignare, & Humbert, 2007); Tang and Chaw, 2013). Students are often prone to silence online and most are reluctant to turn on the camera. In addition, students are unable to present material directly to others or make presentations using physical aids; they can only convey information through screen or file sharing, a method that sometimes makes it difficult to convey meaning. All these factors largely reduce the efficiency of collaboration and waste a

lot of time. And it can be a recurring and stressful situation for university students who are required to do group tasks on a regular basis.

Student readiness for blended learning also depends on the course scheduling and culture. Courses with very tight scheduling can be stressful for students. Students would need more classroom time which ensures more interaction with tutors and fellow students. For courses that span a longer period time, students would prefer a greater proportion of the course to be online, which would save commuting time. Due to the learning style/habits of students due to personality or due to cultural differences, students could experience emotional turmoil during their adaptation process (Zhou, Jindal-Snape, Topping, & Todman, 2008), which would affect their emotional readiness of blended learning.

Participants expressed motivation for blended learning summarized in the table below. Participants generally felt that the availability of more resources and interesting experiences to meet personal expectations through the learning mode was more important than what the learning mode itself was. Self-discipline is a challenge for students in blended learning. Many students are used to being supervised by their teachers and are not sufficiently prepared for self-discipline. Yet blended learning offers self-managed learning, which requires self-discipline and self-motivation (Tang and Chaw, 2013).

Table 1. Respondents' responses to blended learning motivation

Participants	Response Content
1	To achieve outstanding results.
2	The teacher delivers the course well or the course is interesting.
3	Get a good job in the future.
4	Get more practical material and achieve high marks.
5	The teacher's positive attitude and the interesting teaching form.
6	I want to gain a clear understanding of the whole process of a course project and to put it into practice in my future work.
7	Marks, teachers' feedback and self-completion.
8	Be able to acquire knowledge and apply it in practice.
9	The teacher has an interesting teaching style, and I can learn skills that will be useful for my future careers.
10	The course is useful for future careers.

CONCLUSIONS & RECOMMENDATIONS

Students present both a desire to have the convenience of online learning, and a fear and anxiety arising from engaging with it. This dichotomy demonstrates students' differing capacities in the four areas of readiness. Whilst they may have the technical skills for cognitive readiness, many lack the self-efficacy and critical reflection skills for either motivational or emotional readiness. One question arising from this is whether this sample of students, all of Chinese origin, are representative of the wider student body and as such one recommendation is to extend the study to a larger and more diverse student cohort as well as exploring whether staff are subject to the same findings.

Recognising students' differing skill sets in maths etc. many universities offer diagnostic course content testing and support in year one. This same methodology could be applied to testing student readiness for the teaching practices. A framework for testing could be developed based on the student readiness for blended learning factors, which would enable universities to offer tailored support to less 'ready' students.

Once courses are underway, we have a duty of care to identify and support our struggling students. Where learning or pastoral care has taken place face-to-face struggling or absent students can be easy to identify and reach out to. As we move teaching more into the virtual realm it is key that we strengthen staff skills in, and create staff time for, the use of learner analytics to ensure engagement and student readiness (Fox et al., 2014).

REFERENCES

Abbasi, A. S. & Mir, G. M. (2012) Impact of Teacher's Ability, Student's Work Ethics and Institutional Environment on Student Performance of University of Gujrat. *Middle-East Journal of Scientific Research*, 12 (4): 572-579.

Alharahsheh, H. H. & Pius, A. (2020) A review of key paradigms: Positivism VS interpretivism. *Global Academic Journal of Humanities and Social Sciences*, 2 (3): 39-43.

Alexander, M. W., Truell, A. D. & Zhao, J. J. (2012) Expected advantages and disadvantages of online learning: Perceptions from college students who have not taken online courses. *Issues in Information Systems*, 13 (2): 193-200.

Bagozzi, R. P. & Dholakia, U. (1999) Goal Setting and Goal Striving in Consumer Behavior. *Journal of Marketing*, 63: 19-32.

Biggs, J. B. (1999) Teaching for Quality Learning at University. *Buckingham: Open University Press.*

Bolton, R. N., McColl-Kennedy, J. R., Cheung, L., Gallan, A., Orsingher, C., Witell, L. & Zaki, M. (2018) Customer Experience Challenges: Bringing Together Digital, Physical and Social Realms. *Journal of Service Management*, 29 (5): 776-808.

Bortoletto, D. & Boruchovitch, E. (2013) Learning strategies and emotional regulation of pedagogy students. *Paidéia (Ribeirão Preto)*, 23: 235-242.

Chen, H. (2019) Exploring blended teaching models in the context of Internet +. *Journal of Education Space*, 34 (60): 109-110.

Danatzis, I., Karpen, I.O. and Kleinaltenkamp, M., 2022. Actor ecosystem readiness: Understanding the nature and role of human abilities and motivation in a service ecosystem. *Journal of Service Research*, *25*(2), pp.260-280.

Davis, A. B., Sumara, D. J. & Kieren, T. E. (1996) Cognition, co-emergence, curriculum. *Journal of Curriculum Studies*, 28 (2): 151-169.

De L'Etraz, P. (2010) What can an online program do for you? *BizEd*, 9 (6): 34-39.

D'Errico, F., Paciello, M. & Cerniglia, L. (2016) When emotions enhance students' engagement in e-learning processes. *Journal of e-Learning and Knowledge Society*, 12 (4): 10-23.

Driscoll, M. (2002) *Blended Learning: let's get beyond the hype*. [online] Available from: http://elearningmag.com/ltimagazine (Accessed 01 March 2022).

Dreyfus, H. L. (2001) On the Internet. *London: Routledge.*

Enríquez, H., Ramos, N. & Esparza, O. (2017) Impact of the mindful emotional intelligence program on emotional regulation in college students. *International Journal of Psychology and Psychological Therapy*, 17 (1): 39-48.

Eslinger, P. J., Parkinson, K. & Shamay, S. G. (2002) Empathy and social-emotional factors in recovery from stroke. *Current opinion in neurology*, 15 (1): 91-97.

Fournier, S. (1998) Consumers and their brands: Developing relationship theory in consumer research. *Journal of consumer research*, 24 (4): 343-373.

Frielick, S. (2004) Beyond constructivism: An ecological approach to e-learning. *In Proceedings of the 21st ASCILITE Conferenc*e, 328-332.

Garrison, D.R. & Kanuka, H. (2004) Blended learning: Uncovering its transformative potential in higher education. *Internet and Higher Education*, 7 (2): 95-105.

Graham, C. R. (2006) Blended learning systems: Definition, Current Trends, And Future Directions. In *The handbook of blended learning: Global perspectives, local designs, 1: 3-21*.

Graham, C. R., Allen, S. & Ure, D. (2003) Blended learning environments: A review of the research literature. Unpublished manuscript, *Provo, UT*.

Guest,G, MacQueen, K, and Namey, E (2012) Applied Thematic Analysis, *Thousand Oaks: Sage Publication Inc.*

Hamzah, M. L., Tambak, S., Purwati, A. A., Irawan, Y. & Umam, M. I. H. (2022) Effectiveness of Blended Learning Model Based on Problem-Based Learning in Islamic Studies Course. *International Journal of Instruction*, 15 (2): 775-792.

Hanassab, S. (2006) Diversity, international students, and perceived discrimination: Implications for educators and counselors. *Journal of Studies in International Education*, 10 (2): 157-172.

Hansson, R. O., Jones, W. H. & Carpenter, B. N. (1984) Relational Competence and Social Support. *Review of Personality & Social Psychology*, 5: 265-284.

Happy, S. L., Dasgupta, A., Patnaik, P. & Routray, A. (2013) Automated alertness and emotion detection for empathic feedback during e-learning. *In 2013 IEEE Fifth International Conference on Technology for Education*, 2013: 47-50.

Hofmann, J. (2001) Blended Learning Case Study. *Systematic Reviews*. Available from: www.learningcircuits.org/2001/apr2001/hofmann.html (Accessed 19 April 2022).

Horspool, A. & Lange, C. (2012) Applying the scholarship of teaching and learning: Student perceptions, behaviours and success online and face-to-face. *Assessment & Evaluation in Higher Education*, 37 (1): 73-88.

Howard, S.B. (2009) The benefits of face-to-face interaction in the online freshman composition course. *Journal of Online Learning and Teaching*, 5 (4): 685-697.

Kanayama, H. & Nasukawa, T. (2008) Textual demand analysis: Detection of users' wants and needs from opinions. *In Proceedings of the 22nd International Conference on Computational Linguistics (COLING 2008)*, 2008: 409-416.

Kerres, M. & De Witt, C. (2003) A Didactical Framework for the Design of Blended Learning Arrangements. *Journal of Educational Media*, 28 (2-3): 101-113.

Kintu, M. J. (2017) Blended learning effectiveness: the relationship between student characteristics, design features and outcomes. *International Journal of Educational Technology in Higher Education*, 14 (1): 1-20.

Lai, Y. (2020) Research on the construction of a hybrid online and offline teaching model in the Internet era, *Higher Education: Scientific Advice / Educational Research*, 46: 57

Lancaster, J.W., McQueeney, M.L. & Van Amburgh, J.A. (2011) Online lecture delivery paired with in class problem-based learning...Does it enhance student learning? *Currents in Pharmacy Teaching & Learning*, 3 (1): 23-29.

Locke, E. A. & Latham, G. P. (2006) New Directions in GoalSetting Theory. *Current Directions in Psychological Science*, 15 (5): 265-268.

López-Fernández, D., Gordillo, A., Alarcón, P. P. & Tovar, E. (2021) Comparing traditional teaching and game-based learning using teacher-authored games on computer science education. *IEEE Transactions on Education*, 64 (4): 367-373.

Lu, J. (2021a) Flipping the classroom for catechism courses in local universities Exploring the suitability of blended learning. *Heilongjiang Education (Theory & Practice)*, 1 : 70-72.

Lu, J. (2021b) Exploring the suitability of flipped classroom blended teaching in local universities' catechism courses. *Heilongjiang Education (Theory & Practice)*, 1 (2021): 70-72.

Marton, F. & Booth, S. (1997) Learning and Awareness. *Mahwah, New Jersey: Lawrence Erlbaum Associates.*

Mayer, R. E. (2005) Cognitive theory of multimedia learning. *The Cambridge handbook of multimedia learning*, 41: 31-48.

Moyer, M. (1999) *Strengths and weaknesses of weak and strong supervenience.*

Markovic, F. (2018) *Just Because It's Free, Doesn't Mean It's Not Expensive*. [online] Available from: https://www.forbes.com/sites/frantisekmarkovic/2018/12/04/just-because-its-free-doesnt-mean-its-not-expensive (Accessed 19 April 2022).

Okaz, A. A. (2015) Integrating blended learning in higher education. *Procedia-Social and Behavioral Sciences*, 186: 600-603.

Oliver, M. & Trigwell, K. (2005) Can 'Blended Learning' Be Redeemed? *E-Learning and Digital Media*, 2 (1): 17–26.

Pekrun, R., Goetz, T., Frenzel, A. C., Barchfeld, P. & Perry, R. P. (2011) Measuring emotions in students' learning and performance: The Achievement Emotions Questionnaire (AEQ). *Contemporary educational psychology*, 36 (1): 36-48.

Prosser, M. & Trigwell, K. (1999) Understanding Learning and Teaching. *Buckingham: SRHE and Open University Press.*

Qi, S., Hua, F., Zhou, Z. & Shek, D. T. L. (2020) Trends of Positive Youth Development Publications (1995–2020): A Scientometric Review. *Applied Research in Quality of Life*. https://doi.org/10.1007/s11482-020-09878-3 .

Ramsden, P. (1987) Improving teaching and learning in higher education: The case for a relational perspective. *Studies in Higher Education*, 12 (3): 275-286.

Scherer, R., Howard, S. K., Tondeur, J. & Siddiq, F. (2021) Profiling teachers' readiness for online teaching and learning in higher education: Who's ready? *Computers in human behavior*, 118: 106675.

Sidelinger, R. J. & Booth-Butterfield, M. (2010) Co-constructing student involvement: An examination of teacher confirmation and student-to-student connectedness in the college classroom. *Communication Education*, 59 (2): 165-184.

Sit, J. W., Chung, J. W., Chow, M. C. & Wong, T. K. (2005) Experiences of online learning: students' perspective. *Nurse education today*, 25 (2): 140-147.

Starenko, M., Vignare, K. & Humbert, J. (2007) Enhancing student interaction and sustaining faculty instructional innovations through blended learning. *Blending Learning: Research Perspectives*, 161-178.

Tang, C. & Chaw, L. (2013) Readiness for blended learning: Understanding attitude of university students. *International Journal of Cyber Society and Education*, 6 (2): 79-100.

Thompson, C. J., Locander, W. B. & Pollio, H. R. (1989) Putting consumer experience back into consumer research: The philosophy and method of existential-phenomenology. *Journal of consumer research*, 16 (2): 133-146.

Varela, F. J., Thompson, E. & Rosch, E. (1991) The Embodied Mind: Cognitive Science and Human Experience. *Cambridge: MIT Press.*

Vargo, S. L. & Lusch, R. F. (2004) Evolving to a new dominant logic for marketing. *Journal of Marketing*, 68 (1): 1-17.

Vargo, S. L. & Lusch, R. F. (2016). Institutions and axioms: An extension and update of service-dominant logic. *Journal of the Academy of Marketing Science*, 44 (1): 5–23.

Vinacke, W. E. (1960) The drive-modification theory of human motivation. *The Journal of Genetic Psychology*, 96 (2): 245-268.

Vink, J., Koskela-Huotari, K., Tronvoll, B., Edvardsson, B. & Wetter-Edman, K. (2020) Service Ecosystem Design: Propositions, Process Model, and Future Research Agenda. *Journal of Service Research*, 24 (2): 168-186.

Wakefield, A. B., Carlisle, C., Hall, A. G. & Attree, M. J. (2008) The expectations and experiences of blended learning approaches to patient safety education. *Nurse Education in Practice*, 8 (1): 54-61.

Wakenshaw, S. and Harvey, D. (2020) Value Co-creation and Resource Integration: a Case study of Strategic Marketing Module Design, in *Excellence in Engineering Education for the 21st Century: The Role of Engineering Education Research, The Proceedings of the 7th Annual Conference of the UK & Ireland Engineering Education Research Network, 374-383*

Weller, J. A., Moholy, M., Bossard, E. & Levin, I. P. (2015) Preadolescent Decision-Making Competence Predicts Interpersonal Strengths and Difficulties. *Journal of Behavioral Decision Making*, 28 (1): 76–88.

Whitelock, D. & Jelfs, A. (2003) Editorial: Journal of Educational Media Special Issue on Blended Learning. *Journal of Educational Media*, 28 (2-3): 99-100.

Yan, Y. & Chen, H. (2021) Developments and Emerging Trends of Blended Learning A Document Co-citation Analysis (2003-2020). *International Journal of Emerging Technologies in Learning*, 16 (24): 149–164.

Zhang, X., Liu, M., Hang, A., Ma, L., Gu, J. & Tang, D. (2020) Exploring blended learning in the context of the new coronary pneumonia epidemic. *Nanjing University of Chinese Medicine*.

Zhou, Y., Jindal-Snape, D., Topping, K. & Todman, J. (2008) Theoretical models of culture shock and adaptation in international students in higher education. *Studies in higher education*, 33 (1): 63-75.