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Student Experiences with Hybrid Learning Environments: A Qualitative Study of Motivation and Academic Engagement

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Abstract

Background:

Hybrid learning not only broadened access, but also reframed the students' way of being motivated and knowledgeable about participating, belonging and personal responsibility for learning.

Methodology:

In this qualitative secondary analysis, study reviewed the anonymous student narratives which emerged in institutional evaluations, descriptions of open-ended survey responses and qualitative studies relating to blended and hybrid courses. Thematic synthesis with a reflexive approach was used to analyze the data, focusing on both commonalities and differences as well as contradictions.

Results:

5 themes emerged: autonomy as resource and burden; the presence of the instructor as a motivator; participation disparities in physical and electronic environments; disruptions and increase in work load; belonging via meaningful relationships. Students appreciate flexibility, repetition/replay, less travel, and options to control the time for studying. Motivation however declined if the expectations were unclear, if the participation in online activities was seen as less important, or technology had negative impact on the interaction. Student engagement was better when the instructors planned alternative routes in which to engage, indicated clear patterns (rhythm) in their communication, and tied activities between modalities together.

Conclusion:

The study resulted in a proposed model of hybrid engagement between structure, presence, agency, inclusion and reflective support, which consistently aligns with a student-centered approach.

Keywords

Hybrid Learning; Student Motivation; Academic Engagement; Instructor Presence; Student Belonging; Qualitative Secondary Analysis

1. Introduction

The blended learning model marked the key characteristics of the current higher education system since it involves synchronous or asynchronous learning online coupled with planned and structured campus learning. Institutions embraced this approach to boost enrolments, ensure continuity for students, have the flexibility to make more of the physical space, and accommodate students' activities and study habits influenced by work, caring responsibilities, disability, distance, and financial obligations. However, hybrid provision was more than a change in provision. It impacted on students' understanding of responsibility, effort, teacher engagement, their own engagement as learners, and their discretion as to whether to pursue academic objects and tasks were worth being done (Abu et al., 2021).

It is a concept that was frequently talked about as being able to sum up the physical and digital. However, the reality was depicted as a more complex story from student's accounts. It is possible to have a technically hybrid course without being a great pedagogy or emotionally connected or even socially hybrid. Students may not be able to speak, see nonverbal cues, ask follow up questions or build relationships as others may do when attending a class face to face, but may receive the same slides when attending online. The interaction experiences of campus participants may be qualm or distracting. Flexible access could create a decreased need for travelling and self-paced learning but there is a potential for weak routines, increased procrastination and move the burden of co-ordination from institution to the learner (Bergdahl & Hietajärvi, 2022).

Thus it was not assumed that the level of motivation

was a consistent characteristic of individuals in hybrid environments. It was born out of the interplay of value, confidence, a sense of belonging, workload, feedback and a feeling of control. Pupils were more likely to put in effort if activities were seen as purposeful; they had clear expectations; activities could be seen to be making progress and rewards for participation were possible (Butz & Stupnisky, 2016). When the course appeared to be a series of disconnected tasks and online attendance was not the primary focus, motivation declined, as did it when technology continually disrupted flow of social and cognitive processes. Academic engagement also was more than attendance. It involved behavior, emotion, thinking and self-control in organizing study in various locations and on different platforms.

Several topics have been discussed related to satisfaction, convenience, or participation in a learning platform, but usually has not been thoroughly analyzed with regard to student experiences of the motivational framework of hybrid learning or the hybrid learning framework itself. This study filled that gap by utilizing student stories from publicly available data from qualitative research, institutional assessments and open-ended reports from surveys. Three analysis questions were asked.

- **RQ1:** What does the students reflect in terms of the pros and cons of the motivation to participate in hybrid learning?
- **RQ2:** What strengths and weaknesses in engagement with school academically grew?
- **RQ3:** What did managers and educators do that enabled equity in the modalities?

The study offered one interpretation of the concept of a hybrid quality from the student's perspective. It claimed that there were five misunderstandings for effective hybrid learning: coherent structure, visible presence of the instructor, intentional and meaningful role for the students, participation of everyone, and reflective support. These were conditions not to be followed like a checklist, but were conditions that instituted an engagement system. Their value was reliant on the level of student interaction with them within the framework of teaching, assessment, communication, technology, and with their peers.

2. Conceptual Orientation

An integrated perspective of motivation, engagement and design of learning environments guided the analysis. Motivation was defined as Direction, Intensity and Persistence of Academic effort. This was influenced by students' confidence of being able to achieve, their appreciation of the task, their autonomy in doing it, and whether or not they thought they would be rewarded for doing it. Academic engagement was operationalized as the behaviors of attending class, contributing, focusing on class, preparing, seeking help (from peers or teachers) and reflecting (on learning outcomes) of learning. These processes did not reside simply with individual students, and they were overall institutionalized in forms of processes. One of the impacts of hybrid learning was a change in agency. Student choices in place, pace, sequence and at times attendance mode was gained (Capone & Lepore, 2022). The choice may be able to help achieve autonomy when learners had the time, confidence, digital access and planning capabilities needed. But with other alternatives, the choices proved cumbersome because students were asked to solve any conflicting requirements involving when things were scheduled, when they were "in the same family", when several programs were offered at the same time, or when it wasn't clear if they were invited in or not. This flexibility thus served as a tool both as a resource for some students, and as an additional challenge for others.

An academic and relational signal was found to be instructor presence. Students identified the presence of their teacher in the following ways: through communication, feedback, facilitation, clear explanations, recognition of contributions, and by seeing the coordination of on-line and classroom activities. Presence minimized doubt and uncertainty and developed an awareness that students learning was being witnessed. The psychological distance of its digital participation was increased because of its absence (Chiu, 2023). Presence had to be flexible, more fluid, and travel across modalities in the hybrid environment than be simply contained in the room. Belonging referred to students feeling like they belonged, were recognized and a part of the learning community. It was based upon consistent contact, on respectful discussion, on mutual knowledge, on opportunity to contribute as well. Mixing like this

could open up access and dilute the "entanglements" that spontaneously formed. Thus, deliberate design of belonging was needed – particularly in the case of students entering who were attending remotely, changing their mode of attendance, or who had small peer networks.

Harmony was also a conceptual deviation from the formal equality, to experimental equity. Providing all students with identical video connections didn't ensure equals opportunities to participate with (Chiu, 2023). Audio quality, camera positioning, turn taking conventions, digital confidence, language, disability, home environment and attention of the lecturer had an impact on the digital participation experience. Equity demanded for the same opportunity to contribute, to provide feedback, to be recognized, although the paths to these may not be the same.

3. Methodology

The secondary analysis of the study was a qualitative analysis. This method was chosen because a considerable amount of student evidence (qualitative study) and institutional evaluations, learning enhancement projects, and open-ended surveys were already gathered. Reanalysis provided the opportunity to investigate patterns across contexts without the need to present a new primary data set and making the claim of statistical generalization.

A purposive evidence bank has been created of publicly available evidence in English literature about student experiences of blended, hybrid, flexible or mixed face/higher education. Materials were kept if they included students' literal statements, thematic analysis (based on students' comments) or very detailed qualitative analysis of students' motivating and engagement. Out of the reports that only covered technology adoption without student related experiences or just quantitative satisfaction with the technology, just promotional case descriptions, and school level contexts, were excluded. This corpus comprised various types of undergraduate and postgraduate learning in professional, social science, business, computing, health and general education settings.

The analysis was done in four stages. Firstly, pertinent portions of the narratives were pulled out into a structured matrix. Each segment was marked

for its learning context, modus, kind of interaction, reported benefit/difficulty, motivational implication and consequences of engagement. Secondly, initial codes were created by close reading. Solemnity, confusion, teacher calls, peer interaction, evaluation anxiety, confidence, distraction and asking for help were incorporated into the codes.

Third, the codes were then analyzed between documents and identified under tentative themes. Explicitly contradictory accounts were not taken up and taken a fresh look. For instance, lectures were coded as an accessibility resource and as a postponing of the participation. In some accounts break out rooms were described as 'supportive', while others referred to them as 'socially uncomfortable'. Fourthly, the themes were compared to the overall matrix to form a explaining model that connected learning design conditions with the motivational and engagement outcomes.

In order to preserve reflexivity, student accounts

of their narrative understandings were regarded as located, situated and not as simply measuring. Positive responses may be due to digital confidence before teaching/work/learning in an online environment, or to supportive home situations, and negative responses may be due to any emergency implementations, not necessarily from the hybrid educational model. The mechanisms, conditions, and variation, therefore were emphasized in the analysis. No attempt was made to entail or to prepare a theme logging and thus no attempt was made to count prevalence's. An audit trail that traced themes back to codes was created to enhance quality, disconfirming accounts were included, and there was a clear separation of recorded experiences and inferences.

Since data from the study comes from secondary sources and was de-identified, there was no direct recruitment or collection of personal data. Much analysis centered on educational experience, and reproduced none of the identifiable details of context.

Table 1. Qualitative secondary-analysis design and interpretive safeguards

Element	Specification	Analytical purpose
Research design	Qualitative secondary analysis	Enabled synthesis of existing anonymized student narratives across varied hybrid settings
Evidence boundary	Publicly accessible qualitative studies, institutional evaluations, learning enhancement reports, and open-ended survey summaries	Prioritized experiential depth rather than statistical representativeness.
Inclusion focus	Higher-education materials addressing motivation, engagement, flexibility, belonging, workload, interaction, or participation	Excluded technology-only descriptions and purely quantitative satisfaction reports.
Analytical process	Extraction, open coding, comparison, thematic grouping, and explanatory integration	Preserved contradictions and contextual variation.
Quality safeguards	Audit trail, disconfirming accounts, reflexive interpretation, and separation of report from inference	Reduced overgeneralization and strengthened interpretive transparency.

4. Findings

4.1 Flexibility strengthened agency but increased coordination demands

Flexibility was the most frequent immediate advantage conveyed by hybrid learning that students

reported. With less travel, there was both time and opportunities to work, to care, to rest and to pursue self-study. A recorded explanation enabled revisiting of difficult concepts and digital resources enabled the pacing and sequencing to be regulated by students. Often, reaching remote access was a requirement of participation and health, anxiety, mobility and long commutes all meant there were those that had to find a way around.

But to be flexible did not mean that one was necessarily motivated to become so. Students indicated that open schedules might reduce sense of urgency, and make it difficult to identify study and personal time. Sometimes recordings turned into obligations and were not means of learning. Where there were variations in modules, attendance, and/or weekly rhythms, considerable time was invested in searching for information and trying to determine which things were more important. The heaviest burden was where flexibility was provided with no apparent framework (Fan et al., 2024).

The analysis suggested that it was necessary to have bounded choice in the case of productive agency. Where students were given choices in the path of participation, when there were—they tended to take up the choice within safe parameters, much to their happy reactions. Coordination costs were decreased due to clear pathways and limited platform variation, milestone reminders, and explicit estimates of task duration. Flexibility – Adaptation was experienced as supportive, if the course maintained rhythm whilst within that rhythm adaptation was allowed.

4.2 Instructor presence acted as a motivational anchor

Students perceived staff presence in being responsive, transparent, enthusiastic and facilitating. The course was signaled as being deliberately managed through case briefings, timely feedback, acknowledging questions asked online, and through explicit linking to activities. These signals were a sign of confidence to success when they tried. Presence was particularly special when students could not be physically with fellow pupils and teachers.

The uncertain situation due to weak presence. Students reported remote classroom sessions where there was conversation, but no remote students

were known to be involved. Others encountered the less than optimal scenario of asynchronously provided materials without explanation, prioritization or feedback. In such situations, students started to wonder why they should be in school and it started impacting negatively on their performance. The problem is not digital delivery per se; it is that there are no “relational and instructional cues” (Fan et al., 2024).

Good teachers disciplined the use of modalities. They referred to participants by name, answered the questions from the classroom, observed the chat function and waited for the comments to be made and they clarified the link between the activities carried out in the physical environment and the activities in the digital environment. The students preferred a small number of messages as opposed to common messages. The more predictable the contact, the less anxiety which led to a decrease in cognitive load, while the more fragmented the message was (between email, platforms and social media), the greater was the cognitive load.

4.3 Participation inequities shaped engagement

The students in the room could use eye contact, body language and informal conversation to enter discussion. The remote students had to rely on the microphone, camera, chat facilities and mediation of the lecturer. Interruption was difficult due to delays, or due to poor audio. Some students chose not to keep their cameras on for privacy, bandwidth, fatigue, or “home conditions” but then didn’t feel as if they were recognized as much.

Due to the disparity of participation across confidence and language, comparisons were only made with other students in the same group. Chat gave all students, particularly for reflective students, the opportunity to type contributions before sending, and gave the opportunity to students who don’t speak as much to type in without having to compete for the floor time. Alternatively, if the discussion were fast, they might proceed to the next talking point before the typed ones were added. Some students were less intimidated to speak using breakout rooms, but were uncomfortable if one of the students didn’t take a role or peers were quiet (Fazza & Mahgoub, 2021).

Judges fairness by recognition, NOT same treatment.

Improvements in engagement occurred with the inclusion of multiple opportunities to make assessed contributions as well as the integration of these contribution opportunities into the process of the shared dialogue. Polls, collaborative documents, structured active turn taking, ask anonymous questions and like - short reflections increased participation. Their effectiveness was limited to when there was some impact of offering with teaching and not simply as a form of fiery (Fazza & Mahgoub, 2021).

4.4 Fragmented routines intensified workload and fatigue

The hybrid learning environment was experienced by a lot of students as more rigorous than the fully-online or the totally campus-based learning. Transitions from classroom to video-based tools to learning management systems, messaging and independent tasks. Often had to change modes, resulting in lost focus, reorientation. Combining two synchronous sessions caused screen fatigue, and there were gaps in the day of inefficient campus/online scheduling that were too long to use.

There was a lot of uncertainty in the interpretation of workload. Students found it overwhelming when content was presented that didn't allow them to easily identify the essential parts of the assignment and optional parts and/or resources, and/or digital assignment content was added, but other work was not taken away. There were a number of tasks which left a feeling of hanging unfinished business. The fall of motivation was caused by endless efforts and by lack of relation between the effort and the assessment and learning outcomes (Gamage et al., 2022).

However, because the activities were well-designed and integrated, these tasks did not seem to students to have a high workload, although academic requirements were still rigorous. Students appreciated having consolidated weekly checklists, having a fixed deadline, short explanation of purpose and having links seen from preparation to live interaction and assessment. Workload based recovery (recovery time protected) and workload with recognizable boundaries sustained engagement.

4.5 Belonging depended on purposeful interaction

Nor was interaction something thought to be a valuable lesson to students in itself. If a discussion wasn't truly academic and if the peers were not known, then there were chances for a performative compulsory discussion. Through the co-operation over a period of years, the shared problems, the support and the viewing of their approach to learning, meaningful belonging was developed.

There was a decrease in pre- and post-class unplanned interactions in the hybrid settings. After class, remote students were able to walk away and by informally being in close physical proximity to one another, the campus students were able to develop relationships. Pupils who regularly dropped in on-line sometimes felt like outsiders to the group even if academic material were available on-line. This peripheral condition had an effect on the help-seeking and willingness to contribute (Gamage et al., 2022).

Continuity in small groups through stable groups, peer review, collaborative problem solving and responsibility rotation. Informal check-ins and social openings helped and when coupled with support for homework, students appreciated these the most. What is emphasised was the sense of belonging that was enhanced by the sensitivity of the course to various situations without making primary/secondary separations amongst the pupils.

4.6 Motivation and engagement formed a dynamic cycle

The themes played off of each other, in a positive or negative feedback loop. There were less misunderstandings about structure and presence of the instructor to increase confidence. Participation and seeking of help was facilitated by confidence. Participation resulted in feedback and membership, and led to greater task value and persistence. In contrast, lack of clarity led to higher levels of delay, less attendance and lower levels of contact. Less visibility of students due to reduced contact also further decreased the confidence as well as the motivation (Heilporn et al., 2021).

These cycles may be repeated by students, within a single module. Re-engagement could be through feedback on assessment, a supportive peer group or a successful contribution. Withdrawals may be related to technical problems, lack of communications or

cumulative recordings. With this in mind, designing a hybrid course did not just rely on a fixed course design, but also on discovering signal signals and adjusting the course in a timely manner.

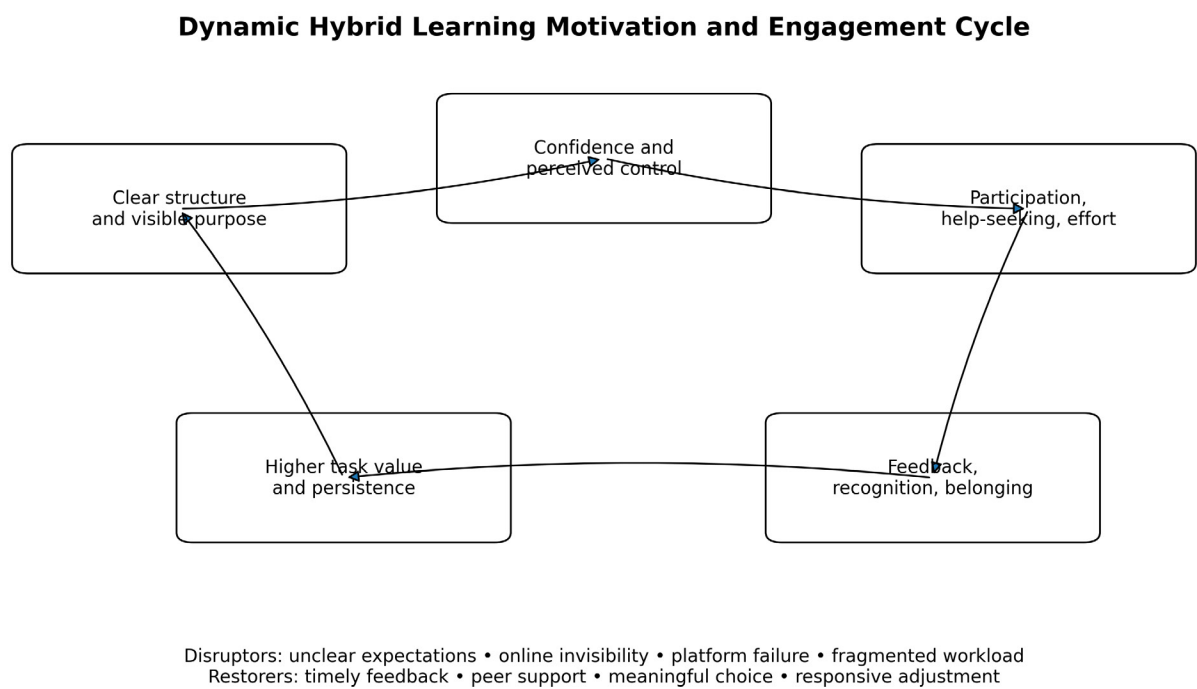


Figure 1. Dynamic motivation and engagement cycle within hybrid learning environments.

4.7 Digital confidence influenced whether students could convert access into engagement

Being digital confident was not just about technical skills. Students had to be familiar with handling notifications, finding materials, determining what they were needed for, using an appropriate communication and recovery strategies, when systems broke. Learners that had a positive attitude towards trying this platform reported increased independence. Others were unsure of trying activities that could have let them in because of embarrassment and/or fear of messing up in front of others and/or fear of disturbing the class. Their now improved confidence was the result of the benefits they felt from using and through being well instructed and being able to use it with low risk. Ideally, short orientation tasks that were similar to actual work of the course were more effective than the more “generic” demonstration of software. Pupils appreciated having information on what to do if the sound broke, internet links changed or if the submission was not confirmed. The type of

knowledge as contingency lessened the emotional effect of slight disturbances and safeguarded the concentration. It was also noted that there was dispersion of Digital competence throughout the learning system. The use of these tools may not have been consistent with the class teacher, and thus a technically competent student might still lose interest when the teacher did that. On the other hand, when communication and activity design was coherent, simple technology enabled for good engagement. Avoidance of institutions conceptualising digital readiness as a lack or deficit on the part of students should thus be recommended. Readiness covered such topics as platform stability, accessible design, instructors’ ability, technical support, and conventions.

4.8 Academic identity shaped responses to hybrid participation

Students translated ‘hybrid learning’ into considerations of what it ‘should look like’ to learn in a ‘legitimate’ university. Some equated the presence

on campus, the schedule and involvement to in-depth studies. Flexibility and independent use of the digital to solve problems were seen as evidence of mature learning by others. These expectations will impact on satisfaction and persistence, particularly transition into HE.

Sometimes students who felt that online attendance was a reflection of less dedication, disguised the real issue about online attendance and/or were less

involved with the online attendance. Instructors found that they described both as valid academically and provided meaningful responsibilities which, in turn, led the students to feel as if they had a greater sense of ownership. For engagement to be hybrid, there had to be a “whole-of-academic-identity” approach, where locality was not a determinant of seriousness, or of visibility or membership.

Table 2. Student-experience themes, motivational tensions, and design responses

Theme	Enabling experience	Engagement risk	Design response
Flexibility and agency	Reduced travel, repayable materials, control over time and pace	Procrastination, blurred routines, coordination burden	Bounded choice within predictable weekly pathways
Instructor presence	Clarity, feedback, recognition, purposeful facilitation	Online invisibility, uncertainty, reduced perceived value	Distribute attention and communication across modalities
Participation equity	Chat, polls, reflective contributions, multiple response formats	Audio delays, camera pressure, unequal turn-taking	Create legitimate and consequential contribution routes
Workload and fatigue	Flexible sequencing and resource access	Platform switching, screen fatigue, duplicated tasks	Consolidate instructions and protect recovery time
Belonging	Stable peer groups, reciprocal support, shared problems	Peripheral remote identity and reduced informal contact	Design repeated, academically purposeful interaction
Digital confidence	Independent navigation and recovery from minor failure	Fear of public mistakes and avoidance of tools	Use authentic low-risk practice and clear contingencies
Academic identity	Ownership of flexible and independent study	Online participation perceived as less legitimate	Validate both modes through equivalent academic responsibility

5. Discussion

The results indicated that hybrid education stimulated access, but shifted the focus of coordinating access. Learning was controlled by the learners and occurred in their preferred time and locations, but also schedules, technologies, communication and choice of participation were determined by them. When institutional structure was in evidence, this was a productive transfer. And when flexibility was equated with self-management with lack of support, it turned

into discouraging.

Motivation and engagement were considered to be relational accomplishments and this idea was the central theoretical implication. Students were not simply taken to an environment, taken out of where they were and dropping into the situation with some motivation. They made sense of signals coming from course organization, the way the instructor was teaching, others in their class, technology, and evaluation. These ‘signals’ influenced the perception of the value, feasibility and social validation of

effort. So there was more in Hybrid design than just convenience that had an impact on motivation in terms of meaning and predictability (Lane et al., 2021).

The coordinating conditions that turned out to be the most important ones were the presence of an instructor. Presence linked environment elements which were out of touch. It facilitated student's understanding of priorities, technology failures interpretation, the participation norms establishment and recognition. Presence didn't seem to need always being available, as a very important note. This needed to be authentic, intentional and fair communication. Autonomy could arise from well-timed and over communication, the production of overload.

However, the results also contradicted seamlessness as measure of hybrid quality, because they contradicted the results of the previous study. Several shifts of modes were unavoidable and even could facilitate thinking. The more key issue was if transitions were intelligible. When there was a defined purpose for the use of different tools and formats and when information didn't change, students put up with it. The friction which allocated time and energies without repaying in learning became counterproductive (Lane et al., 2021).

Based on the synthesis, a hybrid engagement framework, oriented to students' needs, was built. There were five dimensions in the framework. Structure was defined as having structure in the rhythm, structure in the platform, structure in workload and structure in purpose. Presence was defined as instructional presence, feedback/facilitation, and recognition. Agency was linked with meaningful choice along with planning resources. Inclusion was seen as equal contribution opportunities by modality. All aspects of monitoring, self-regulation guidance and timely intervention were deemed to be reflective support.

These were dimensions that were dependent on each other. If there was no structure it was overload. Agencies were progressively giving up and structure without agency became rigid and could not cope with a variety of situations. Being present but not included may allow the privileged status of those that are visible on campus. Inaccessibility despite inclusion can lead to passive participation socially. Reflective

support was established, linking the dimensions together, which helped pupils to identify pattern, react to events of disruption and make purposeful decisions (Mohan).

There was a distinction between accessing and engaging as well. Offering a recording provided access but extent of engagement was dependent on the when, why and how students used the recording. Giving Chat, as a way to obtain participation, could not be enough; it has to be acknowledged and integrated. Increased flexibility (Mode choice) but Engagement was dependent on whether choices were equal recognized. Just for that reason, educational managers ought to examine the design features' consequences as perceived by experts.

Equity considerations of hybrid learning were important. If students feel in control of their device, they have quiet space, effective digitizing skills, and flexible jobs, they can make choice an opportunity for success. You should remember that what you design as "inclusive" for a student with limited bandwidth/cable, a shared home, disability, language issues or irregular work schedule might not be interpreted as the same by that student. There needed to be upfront design for equity and post hoc 'accommodation' when problems became apparent (Raes, 2022).

These qualitative accounts indicated that minimizing uncertainty (with no good reason) was a way of safeguarding academic freedom. This was not an easy route to 'lightened' mental activity. Students were able to focus on complex content when the process that was taking place around the content was understandable. Students had clear expectations and this freed up their minds to learn. Those resources were used in a way that did not lead to learning benefits and were instead used in the following ways: Confusing Navigation, Duplicated tasks, Inconsistent communication.

Finally, the study suggested that hybrid learning could be considered as an adaptive system of service. Course leaders required feedback loops where they could pick up an imbalance in participation, build up of work and loss of connection. Emerging problems can be determined by short pulse questions, learning analytics – which must be interpreted with caution, as well as tutorial conversations and student partnership. Adjustment was not a sign of an ineffective planning

process – it was an effective skill in a context where the context in which students were being educated, and modality patterns in which they were schooling, were changing.

The framework also recommended student voice to play a part in the operations of the course, in addition to the end of module evaluating. Small windows of latitude for not understanding the instructions, unequal participation or unrealistically high workload, provided teaching teams the time to react before it harmed the students' learning (Raes, 2022). Completed the feedback loop: when the instructor would make it clear to the student why it was

important that the elements of their work change, why there were elements that could not, and why, the student was more likely to provide constructive feedback. This practice helped build relationships of trust and that engagement was work shared. It also helped managers not take a lack of a response as an indicator of satisfaction. In hybrid settings, non-response might be a sign of confidence but in other contexts it might be the result of losing interest, feeling a sense of disconnection, or restricted access or the feeling that concerns would not be handled in an effective way. This created a quality mechanism and an engagement practice – responsive dialogue.

Student-Centered Hybrid Engagement Framework

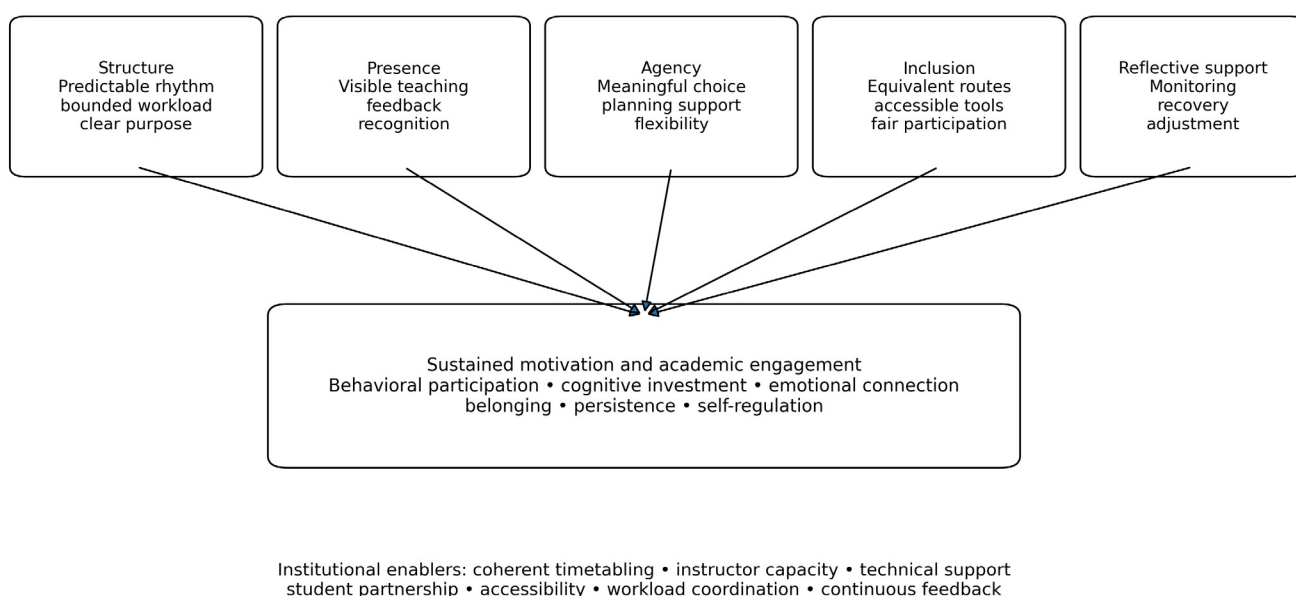


Figure 2. Student-centered hybrid engagement framework and institutional enablers.

6. Managerial and Pedagogical Implications

There should be a minimum standard of hybrid design that would be organized by African institutions, but there should be flexibility in the disciplines. The expectations in the standard should be consistent with one specific location, for weekly instructions, terminology, materials that are available, participation, and contingency procedures. It should also involve teaching teams to describe the

contribution of activities at campus, synchronous online, and in preparation for campus activities to the sequence of learning.

Therefore, timetabling is considered as an 'engagement' intervention. A realistic travel and set up time needs to be allowed for the consecutive change of remote to campus and vice versa. Long screens include breaks and a variety of activity. In the design of the program there should be no multitude of short term deadlines causing sustained overload. Students should be informed about commitments

from all modules in a calendar (Su et al., 2024). Faculty Development should be beyond the Platform Operation. Teacher required techniques for dual attention facilitation, inclusive turn taking, minimal communication, online bond building and workload estimation. There could be improvement of the complex synchronous hybrid sessions, with team teaching or classroom support. If such help was not available, a simpler design was preferred to a design with a lot of technical ingenuity that would be distracting.

Assessment should be in support of continuity between modalities. The links between preparatory activities and live activities should be clearly evident, as well as the assessment criteria. Low-stakes feedback would benefit learners in helping them to recalibrate prior to reaching crisis. Assessment of participation should take into account various types of contribution rather than relying on camera use and/or spontaneous dialogue to represent participation. Student orientation should incorporate self-regulation without at the same time removing the responsibility of self-regulation from the students' shoulders. Templates could support planning, estimates of study

time could be helpful, guidance for notifications on how to use them effectively and examples of good recording could all help agency. Needs around being confident and accessing digital information could be identified through early diagnostic activities. Support should be readily available and 'just part of the job'. Operation and experience indicators should be checked as a part of the quality monitoring. Platform usage and attendance will identify, but not give reasons for, pattern. Mode specific participation factors, help-seeking, recovery after absence, workload perception and belonging are factors to be analyzed by institutions. There is a need to analyze student comments to identify design issues that keep popping-up – not just satisfaction data.

Instructors protect capacity in leadership. Teachers used to lecture at their class face-to-face, supervise the chat room, troubleshoot the technology, make recordings of the material and assist individual students—all at one time with no recognition for workload. Sustainable delivery includes realistic class sizes, technical supports, preparation time and online availability (boundaries) requirements.

Table 3. Operationalization of the student-centered hybrid engagement framework

Framework dimension	Managerial and teaching practices	Expected student outcome	Failure mode
Structure	One weekly pathway, consistent terminology, clear workload estimates	Reduced uncertainty and stronger persistence	Confusing navigation; accumulated tasks
Presence	Predictable contact, timely feedback, active cross-modal facilitation	Confidence, recognition, and help-seeking	Physical-room bias; communication overload
Agency	Mode choice, repayable materials, planning support	Autonomy and adaptive participation	Choice without guidance; delayed engagement
Inclusion	Accessible technology, multiple participation routes, fair recognition	Greater visibility, belonging, and contribution	Formal access without experiential equity
Reflective support	Pulse feedback, progress review, recovery planning, responsive adjustment	Re-engagement and self-regulation	Silence misread as satisfaction

7. Limitations and Future Research

The qualitative materials employed in this study were secondary/derived, relying on the objectives and questions in the original materials, as well as the

sampling and reporting methods of those materials. A higher proportion of student groups may also have not been represented, for example those that totally disengaged or had no access to the institutional means of giving feedback. No estimation of the frequency of the themes or statistical comparison of the learning outcomes was done.

There were diverse designs in the category of hybrid learning. Attending school by rotation, participating in Hyles schools, receiving recorded lectures and weekly hybrids were not the same for everyone. Interpretation was also influenced by institutional context, discipline, assessment type, class size and conditions with regard to the post-pandemic situation. Therefore, the findings will guide questions for analysis and are not a 'one size fits all' solution.

Future research is needed to track students over time from motivation to withdrawal, to re-engagement. Commuter and disabled students, international students, working students and those with caring responsibilities should all be studied comparative studies. It would also be interesting to research the teacher workload, peer relationships and perceived flexibility/actual control. The five-dimensional framework might be used in participatory design studies, and whether certain combination of the dimensions is stronger than others to engage equitably across disciplines might be tested.

8. Conclusion

Parental involvement was increased in hybrid learning models, but did not necessarily lead to engagement and motivation. Whether flexibility, structure, instructor presence, participation, workload, and/or belonging were organized impacted the student experiences. Flexibility enabled agency for when selections were constrained by likely cycles, and a clear goal. It undermined engagement, when pupils had too many coordination activities or were felt to be on the fringes of the learning co-community.

Analysis of the results of the qualitative secondary analysis revealed the following: Effective learning in hybrid models was an integrated educational system. The coherent structure may have minimized the unnecessary confusion. Instructor presence was observed and recognition/direction was created. There was different circumstances and they all were

accommodated in meaningful agency. Using inclusive participation ensured it was not a case of leaving remote students as 'second-class citizens'. Reflective supports assisted students to track progress/recover from disturbance.

Quality hybrid teaching and learning thus needed more than technology and access. This involved managerial synergy, pedagogical intent, fair distribution of work and an ongoing learning process through student experience. Schools that attempted to engage and motivate students to embrace a hybrid learning model as an adaptive process, and not just a type of distribution, were better able to help students feel part of their school as they worked together online.

Declarations

Author contribution

Jimmy Helther:

Conceptualization, Methodology, Investigation, Data Curation, Formal Analysis, Visualization, Writing Original Draft, and Writing – Review & Editing.

Ian Couzens:

Formal Analysis, Visualization, Writing, Original Draft, and Writing – Review & Editing.

Both authors contributed equally to this work and approved the final manuscript.

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