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Wellbeing-First HyFlex: Designing Hybrid-Flexible Courses for Belonging, Engagement, and Manageable Cognitive Load

Ramesh Adhikari[1], Suman Thapa[2]
Department of Educational Technology, Kathmandu University School of Education, Lalitpur, Nepal
Department of Educational Psychology, Tribhuvan University, Kathmandu, Nepal
Corresponding Author Email: ramesh.adhikari@kusoed.edu.np

Abstract
Hybrid-Flexible (HyFlex) learning is increasingly treated as a durable mode of provision, yet many implementations still frame "flexibility" as a logistical feature rather than a pedagogical and psychosocial design problem. This can fragment belonging, produce uneven participation expectations, and raise cognitive load for students who must navigate shifting modalities, tools, and routines. This article proposes a wellbeing-first HyFlex design framework that integrates: (1) belonging and engagement research on identity-safe learning environments; (2) cognitive load theory and multimedia learning principles explaining overload risks in hybrid switching; and (3) blended learning models (Community of Inquiry, self-determination theory, and Universal Design for Learning) that operationalize teaching presence, autonomy-supportive structure, and accessible pathways. Using a design-science synthesis method, we develop a conceptual model, a course-level checklist with operational indicators, and an implementation roadmap with risk controls for equity, privacy, and instructor sustainability. The framework supports institutions in moving from ad hoc HyFlex delivery to accountable hybrid ecosystems that can scale without sacrificing care, rigor, or inclusion.

Keyword
HyFlex; hybrid learning; student wellbeing; cognitive load; course design.

1. Introduction
HyFlex learning was popularized as a way to offer students structured choice between in-person and online participation while maintaining a single course identity (Beatty, 2013; Barr & Luo, 2025). The promise is compelling: students can manage health constraints, work schedules, caregiving responsibilities, and commuting barriers without losing access to learning (Baker et al., 2024; Mahrishi et al., 2024). In practice, however, many HyFlex courses reproduce a familiar pattern from emergency remote teaching (Baker et al., 2024). Flexibility often becomes a streaming solution rather than a design solution (Karlsson & Steen, 2025). When HyFlex is implemented as "the same lecture delivered twice," students experience two parallel courses with different interaction quality and different social visibility (Detyna et al., 2022). That difference matters because

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learning is not only cognitive, but also relational and motivational (Baker et al., 2024; Bockorny et al., 2023).

The first challenge is psychosocial. Student wellbeing shapes attention, persistence, and willingness to take intellectual risks (Baker et al., 2024). Belonging—feeling recognized, safe, and able to contribute—has repeatedly been linked to engagement and retention, especially for students who face structural disadvantages (Baker et al., 2024; Mentzer et al., 2022). Hybrid environments can weaken belonging because membership cues are ambiguous (Detyna et al., 2022). Remote participants may feel like "audience members," and students who attend inconsistently may feel they never fully join the community (Detyna et al., 2022; Rhoads, 2020). When belonging erodes, engagement shifts toward compliance and task completion rather than meaningful learning (Baker et al., 2024).

The second challenge is cognitive. HyFlex environments often raise cognitive load by layering tools, channels, and decision demands (Detyna et al., 2022). Students must decide how to attend each week, interpret participation expectations across modalities, and self-regulate in diverse contexts (Barr & Luo, 2025; Detyna et al., 2022). Instructors frequently add redundant materials "to be fair," unintentionally increasing extraneous load (Detyna & Dommett, 2024). Modality switching also disrupts routines and increases navigation complexity (Detyna et al., 2022). Without predictable rhythms and clear signposting, learners spend scarce cognitive resources on "how to participate" instead of on the substance of learning (Detyna et al., 2022).

The third challenge is pedagogical and organizational. Many institutions lack a shared playbook for parity, interaction design, and assessment in HyFlex settings (Barr & Luo, 2025). Instructors are left to invent practices for discussions, group work, feedback, and academic integrity (Detyna et al., 2022; Romero-Hall & Ripine, 2021). Some respond by tightening surveillance and control, which can harm trust and wellbeing (Karlsson & Steen, 2025). Others simplify learning activities to reduce complexity, which can reduce rigor and authentic learning (Heilporn & Lakhal, 2021). Meanwhile, institutional policies on attendance, recording, accessibility, and data use may not align with HyFlex realities (Hidayati et al., 2025). This creates inconsistency and increases instructor workload, which then undermines teaching presence (O'Ceallaigh et al., 2023).

A wellbeing-first approach treats these challenges as design constraints. We define wellbeing-first HyFlex as a course model that prioritizes belonging parity, autonomy-supportive structure, and manageable cognitive load while maintaining academic standards and inclusive participation pathways. The goal is not to reduce rigor, but to remove avoidable friction and psychosocial harm so students can invest effort where it matters. Flexibility without care becomes fragmentation; flexibility without structure becomes overload.

This article addresses three guiding questions. First, what design principles produce belonging and engagement parity across HyFlex modalities without doubling instructor workload? Second, how can cognitive load theory be translated into concrete HyFlex structures, especially regarding modality switching and tool overload? Third, what practical toolkit can support implementation at course and institutional levels, including assessment patterns and risk mitigation for equity and privacy?

Our contribution is both conceptual and practical. Conceptually, we connect belonging and engagement scholarship to cognitive load theory and established blended learning frameworks to explain why HyFlex often fails and how it can succeed. Practically, we provide a wellbeing-first design model (Fig. 1), a principle-to-indicator checklist (Table 1), and an implementation roadmap with maturity staging (Table 2).

Together, these artifacts help move HyFlex from ad hoc delivery to accountable learning design.

2. Research Method

This study uses a design-science synthesis approach to produce an actionable framework for wellbeing-first HyFlex course design. Design science is appropriate when the objective is to create an artifact—such as a model, checklist, or rubric—that can guide practice while remaining traceable to established evidence and theory.

Stage 1 consisted of a structured synthesis across four domains: HyFlex and hybrid learning design, student wellbeing and belonging in higher education, cognitive load theory and multimedia learning, and blended learning models including Community of Inquiry, self-determination theory, and Universal Design for Learning. The synthesis prioritized constructs that translate into observable course features, such as teaching presence, autonomy support, extraneous load, signposting, and accessible participation pathways.

Stage 2 translated recurring mechanisms into design principles and operational indicators. We mapped each principle to course-level features that can be reviewed without invasive monitoring, such as weekly rhythm, parity rules, feedback cycles, participation channels, and transparency notices. This stage produced a draft checklist and a maturity roadmap for staged adoption. Stage 3 refined the framework through internal coherence testing and feasibility testing. Coherence testing checked compatibility among principles and coverage of common HyFlex failure modes, including remote marginalization, ambiguous expectations, overload, and instructor burnout. Feasibility testing evaluated implementation effort and classified actions into Foundational, Developing, and Advanced maturity levels to support incremental adoption.

3. Result and Discussion

This section presents the wellbeing-first HyFlex framework and its operationalization. We first introduce the design model (Fig. 1) and discuss the mechanisms linking parity, belonging cues, and cognitive manageability. We then provide a practical checklist mapping principles to indicators and design moves (Table 1). Finally, we outline a staged implementation roadmap and maturity model to support sustainable adoption with explicit risk controls for equity, workload, and data ethics (Fig. 2; Table 2).

3.1 Wellbeing-First HyFlex Design Model

Wellbeing-first HyFlex begins with an explicit commitment: modality choice should not change a student's chance to belong, learn, and demonstrate competence. Achieving this requires parity of opportunities and support, not identical experiences. Parity means that remote participation is designed as a first-class pathway with clear interaction opportunities, predictable feedback loops, and transparent criteria for participation and assessment. This approach aligns with research suggesting that HyFlex environments should prioritize flexibility and agency to foster student self-efficacy and emotions (Baker et al., 2024).

The model in Fig. 1 organizes HyFlex quality into five interacting design layers: (1) parity rules, (2) community and belonging cues, (3) cognitive-load-aware learning sequences, (4) assessment and integrity patterns, and (5) instructor sustainability and support. These layers operate as a system. A course can fail even with strong content if remote learners are socially invisible, if tool overload raises extraneous load, or if instructor workload makes teaching presence inconsistent. The systemic nature of these

layers is supported by evidence that HyFlex implementation requires balancing technical, pedagogical, and social presence to manage the "mountain" of implementation challenges (Detyna et al., 2022).

Belonging research suggests that students interpret small signals as evidence of membership. In HyFlex settings, these signals include whether remote learners are greeted by name, whether their contributions are visible to peers, and whether group work structures allow remote students to participate without penalty. Identity-safe norms—such as avoiding forced camera use, offering multiple participation modes, and establishing respectful discussion routines—support belonging while acknowledging diverse contexts. Such strategies are critical for addressing the social boundary that can arise between modalities (Mentzer et al., 2022).

Cognitive load theory adds that hybrid switching imposes hidden costs. When students must navigate multiple platforms, inconsistent module layouts, or changing participation rules, they devote working memory to navigation rather than learning. Wellbeing-first HyFlex therefore emphasizes predictable weekly rhythms, tool minimalism, and clear signposting. Autonomy support is central: flexibility without structure is not autonomy; it is abandonment. This interpretation is consistent with findings that students in HyFlex modalities experience increased cognitive load and require structured guidance to make effective modality choices (Detyna et al., 2022).

3.2 Course Design Checklist and Indicators

Principles become effective only when embedded into concrete course structures. Figure 1 visualizes how the five design layers interact to produce parity, belonging, and manageable cognitive load. Importantly, the model also highlights instructor sustainability as a core design requirement: without feasible routines for presence and feedback, HyFlex quality becomes unstable and inequitable. This emphasis on sustainability reflects broader concerns that HyFlex teaching can lead to "double teaching" and instructor burnout if not carefully managed (Karlsson & Steen, 2025).

At the course level, wellbeing-first HyFlex starts with parity rules and predictable rhythm. Parity rules specify how students participate across modalities (e.g., a shared participation channel, rotating remote-first discussion rounds, and equivalent access to feedback). A predictable rhythm reduces anxiety and navigation burden by keeping the same weekly sequence for preparation, participation, and follow-up. By reducing uncertainty, these structures can decrease student stress and enhance the overall learning experience (Bockorny et al., 2023).

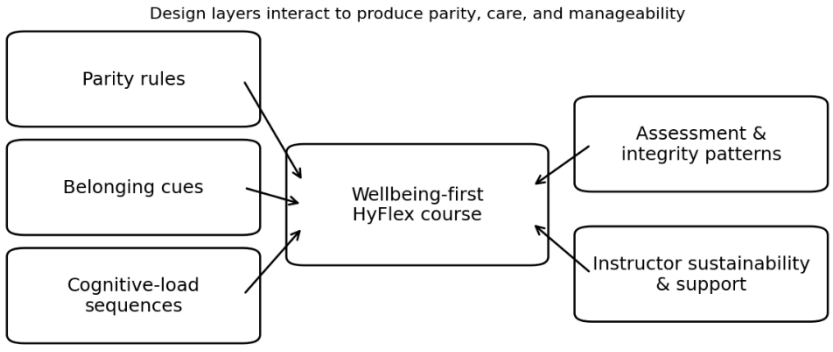

Figure 1. Wellbeing-first HyFlex design model linking parity rules, belonging cues, cognitive-load-aware sequences, assessment patterns, and instructor sustainability.

To support adoption, Table 1 maps wellbeing-first principles to operational indicators and practical design moves. The indicators are intentionally course-level and audit-able without surveillance. They help instructors diagnose common failure modes, such as remote marginalization, unclear expectations, tool overload, and inconsistent feedback timing. Using such indicators helps clarify the communicative and digital challenges inherent in the HyFlex model (Kohnke & Moorhouse, 2021).

The principle of identity-safe community is particularly important in HyFlex contexts because modality can become a social boundary. Structured peer pods, consistent check-ins, and clear norms for how remote contributions are surfaced help prevent a two-tier classroom. When remote voices are reliably heard and recognized, belonging becomes a shared experience rather than a privilege of physical presence. This fosters basic psychological needs such as relatedness and competence (Mentzer et al., 2022).

Tool minimalism is a complementary equity strategy. Each additional platform increases cognitive load, creates access barriers, and expands data exposure. A wellbeing-first design treats the LMS as the hub and limits additional tools to those that directly enable learning outcomes. Combined with scheduled response windows and reusable feedback practices, tool minimalism also supports instructor sustainability. This supports the need for continuous adaptation of infrastructure and digital tools in HyFlex models (Mahrishi et al., 2024).

Table 1. Wellbeing-first HyFlex principles mapped to operational indicators and design moves.

Principle	Operational indicator (course-level)	Recommended design moves (examples)
Parity by design	Remote and in-person students have equal opportunities to contribute and receive feedback each week	Shared participation channel; rotate remote-first rounds; surface remote contributions visibly
Predictable weekly rhythm	Each week follows a stable pre-class / in-class / post-class sequence with consistent deadlines	One-page weekly roadmap; consistent module layout; same-day deadlines
Identity-safe community	Belonging cues are routinized and inclusive across modalities	Opening check-in; names used; multiple participation modes; clear norms for camera/mic
Peer connection structures	Students have stable peer groups that support collaboration and accountability	Peer pods; rotating roles; structured peer feedback; small-group protocols
Tool minimalism	Course uses a small stable tool set; platform hopping is minimized	LMS as hub; one discussion tool; one collaboration tool; avoid duplicate channels

Cognitive-load-aware content	Instructions and materials reduce extraneous load and are chunked and signposted	Short segments; headings; concept maps; 'what to focus on' cues
Autonomy-supportive structure	Modality choice is guided with decision support and transparent expectations	Attendance planning prompts; recommended pathways; parity rules posted
Assessment integrity with trust	Assessment provides valid evidence without intrusive surveillance	Authentic tasks; iterative drafts; reflection + artifact triangulation; light oral sampling
Instructor sustainability	Teaching presence is feasible and predictable without constant live monitoring	Response windows; reusable feedback banks; peer moderation; lightweight check-ins
Accessibility and care	Materials and participation pathways accommodate diverse needs	Captions/transcripts; readable PDFs; flexible expression modes; accessible templates
Privacy and data ethics	Data use is transparent, minimal, and aligned to learning purposes	Plain-language data notice; minimize collection; opt-outs when possible; vendor transparency checks

3.3 Assessment, Integrity, and Engagement in HyFlex

Assessment is where HyFlex tensions often concentrate. Institutions worry about academic integrity, while students worry about unfairness and surveillance. A wellbeing-first approach does not ignore integrity; it redesigns assessment so that evidence of learning is robust without intrusive monitoring. Authentic assessment—tasks that require contextualized application, iterative development, and visible reasoning—reduces the value of misconduct while supporting deeper learning. This shift toward authentic assessment is increasingly recognized as a way to improve student performance and satisfaction in hybrid settings (Karlsson & Steen, 2025).

For HyFlex, assessment patterns should preserve parity across modalities. If in-person students receive richer cues for performance tasks, remote students may be disadvantaged. Distributing assessment across smaller cycles reduces anxiety and enables early feedback. Practical patterns include iterative projects with checkpoints, low-stakes retrieval practice, structured peer review in stable pods, and light-touch oral defense sampling to verify authorship while preserving student dignity. Such regular interaction opportunities are essential for maintaining engagement in business and other graduate-level courses (Heilporn & Lakhal, 2021).

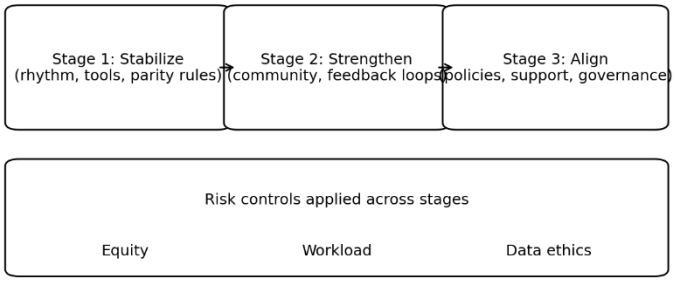

Figure 2. Staged implementation roadmap for wellbeing-first HyFlex with risk controls for equity, workload, and data ethics.

Engagement also depends on teaching presence and clear participation architecture. A single shared participation channel (e.g., one discussion space) improves parity, while rotating roles in peer pods distributes responsibility and builds belonging. Importantly, presence must be designed to be feasible. Scheduled response windows and reusable feedback banks can maintain predictable support without requiring constant live moderation. This approach acknowledges that while engagement is crucial, it must be balanced with instructor workload (Karlsson & Steen, 2025).

Figure 2 provides an implementation roadmap that integrates these practices with institutional risk controls. Equity risks include remote marginalization and accessibility barriers. Workload risks include the "double teaching" trap. Data ethics risks include over-collection of engagement data and opaque analytics. Wellbeing-first HyFlex treats these risks as design constraints and governance obligations, not as afterthoughts. This reflects the necessity of institutional-level support to address the complex challenges of HyFlex (Barr & Luo, 2025).

3.4 Implementation Roadmap and Maturity Model

Wellbeing-first HyFlex should be implemented as a staged institutional capability, not as isolated instructor heroics. The first stage stabilizes the course through consistent rhythm, parity rules, basic belonging routines, and tool minimalism. The second stage strengthens community through peer pods, structured collaboration, and feedback loops that make remote learners visible. The third stage aligns institutional policies, accessibility support, learning design consultation, and governance for recording and data use. This staging corresponds with the growing body of literature that emphasizes the need for long-term institutional adaptation (Wong et al., 2023).

Table 2 translates this staging into a maturity roadmap. The Foundational level focuses on minimum viable HyFlex governance: clear participation rules, transparent assessment expectations, accessible materials, and feasible instructor response routines. The Developing level adds systematic community design, assessment triangulation, and course review using indicators. The Advanced level supports institutional alignment, participatory improvement, and continuous quality assurance across programs. Systematic reviews confirm that such benchmarking and internationalization are key drivers for the maturity of the HyFlex model (Mahrishi et al., 2024).

Across all stages, the core message remains: flexibility without care becomes fragmentation, and flexibility without structure becomes overload. When HyFlex is designed for wellbeing, students can participate consistently even when life

circumstances shift. When it is designed for cognitive manageability and parity, engagement becomes relational rather than transactional and learning outcomes become more achievable for diverse learners. Ultimately, this approach transforms flexibility from a logistical challenge into a pedagogical asset for student success (Baker et al., 2024; Bockorny et al., 2023).

Table 2. Maturity roadmap for wellbeing-first HyFlex implementation.

Capability area	Foundational	Developing	Advanced
Course architecture	Stable weekly rhythm; tool minimalism; parity rules posted	Course audited with indicators; continuous small improvements	Program-level consistency; design patterns shared across courses
Community & belonging	Basic belonging routines; inclusive norms; peer pods introduced	Structured collaboration; peer feedback protocols; belonging check-ins	Institutional belonging initiatives; analytics used transparently for support (not surveillance)
Assessment & integrity	Authentic tasks; checkpoints; clear criteria; minimal surveillance	Triangulated evidence; sampling oral checks; feedback banks	Cross-course assessment strategy; integrity by design embedded in policy and support
Accessibility & UDL	Captions/transcripts; readable materials; multiple participation modes	Proactive accessibility review; accessible templates; support workflows	Institution-wide accessibility governance; universal design embedded in procurement and QA
Instructor sustainability	Response windows; feasible presence routines	Workload-aware course design review; teaching assistant roles where possible	Institutional workload policy alignment; sustained design support and recognition
Privacy & data ethics	Plain-language data notice; minimal collection	Vendor transparency checks; data governance roles clarified	Auditable governance; participatory oversight and continuous review

Source: Processed by the researcher, 2026

4. Conclusion

HyFlex learning is likely to remain a core modality in higher education, but its long-term value depends on whether institutions treat flexibility as a design problem rather than a streaming problem. This article proposed a wellbeing-first HyFlex framework that integrates belonging parity, autonomy-supportive structure, and cognitive-load-aware learning sequences while maintaining academic standards and inclusive participation pathways.

The framework contributes a conceptual model, an operational checklist, and a staged implementation roadmap that can guide instructors and institutions toward more humane and sustainable hybrid ecosystems. By emphasizing tool minimalism, predictable rhythms, identity-safe community practices, and feasible teaching presence, wellbeing-first HyFlex removes avoidable friction and supports students in investing effort in learning rather than navigation.

Future work should empirically validate the framework across disciplines and institutional contexts, including measurement of belonging, workload impacts, and learning gains across modality choices. Nevertheless, the artifacts provided here offer a practical starting point for improving HyFlex quality at scale while protecting equity, wellbeing, and trust.

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