Original Article

HyFlex Learning in the Philippines: A Review of Educational Contexts and Beatty's Design Principles

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Abstract. HyFlex (hybrid-flexible) learning allows students to participate in the same course through multiple modes, typically face-to-face, synchronous online, or asynchronous participation. Beatty proposed four design principles that guide HyFlex implementation: learner choice, equivalency, reusability, and accessibility. In the Philippines, HyFlex emerged within flexible learning policies introduced during the COVID-19 period. Although studies on HyFlex have increased, there is still no consolidated account of how it has been studied across Philippine educational contexts. This study conducted a scoping review to map HyFlex research in the Philippines and examine how Beatty's design principles are reflected in existing studies. The review followed the Joanna Briggs Institute and PRISMA extensions for scoping reviews. Searches were conducted in Scopus, ERIC, EBSCO Education Source, and Google Scholar, supplemented by manual searches in institutional repositories. Twenty-five empirical studies published between 2022 and 2026 met the inclusion criteria. Results show that HyFlex research in the Philippines is concentrated in higher education and spans several disciplines, with quantitative and mixed-methods designs most often used. Across studies, learner choice and accessibility were reported more frequently than equivalency and reusability. Reported outcomes included engagement, satisfaction, and learning performance, while implementation issues included connectivity, classroom orchestration, and workload demands. Overall, the review shows that HyFlex research in the Philippines remains largely descriptive and points to the need for more design-oriented studies, broader educational coverage, and closer attention to Beatty's principles in practice.

Keywords: Beatty's principles; HyFlex learning; Philippine education; PRISMA-ScR; Scoping review.

HyFlex (hybrid-flexible) is a course design approach that offers multiple participation modes within the same course and allows students to choose how they will engage in a given session (Beatty, 2019; Kohnke & Moorhouse, 2021). A typical HyFlex setup supports face-to-face and synchronous and asynchronous online participation, with students able to move between modes as needed. It differs from standard blended or hybrid formats because it treats participation mode as a student decision rather than a fixed course structure (Beatty, 2019; Raes et al., 2020). In practice, it requires design decisions that keep learning activities, resources, and assessment workable across modes, since students may not experience the course in the same way each week (Kohnke & Moorhouse, 2021).

Globally, HyFlex expanded rapidly during and after the COVID-19 period as institutions sought instructional models that could sustain continuity while supporting student flexibility. Recent syntheses show that research on

this approach spans many disciplines and countries, but studies vary widely in how they describe course design, participation, and intended equivalence across modes (Raes et al., 2020; Wong et al., 2023). Reviews also note recurring challenges that shape its implementation, including technology constraints, classroom management across simultaneous groups, and instructor workload demands (Kohnke & Moorhouse, 2021; Raes et al., 2020; Wong et al., 2023). These patterns suggest that HyFlex is not always described with enough detail to distinguish it clearly from other forms of mixed-modality delivery.

In response to these developments, HyFlex in the Philippines emerged as part of national efforts to implement flexible learning. In higher education, the Commission on Higher Education (CHED) issued guidelines that formalized flexible learning as an appropriate approach during the pandemic (CHED, 2020). It later released an addendum on sustaining flexible learning arrangements beyond emergency conditions (CHED, 2022). In high school and elementary, the Department of Education (DepEd) adopted the Basic Education Learning Continuity Plan, which formalized multiple learning delivery modalities during the same period (DepEd, 2020). These policies did not mandate HyFlex, but they shaped the conditions in which institutions explored mixed-modality delivery and built local practices around flexible participation and technology-supported instruction. In response to these developments, Philippine research has grown across sectors and disciplines. However, there is still no consolidated account of how HyFlex has been implemented, defined, and studied within Philippine educational contexts.

To examine HyFlex design quality, this review uses Beatty's four design principles: learner choice, equivalency, reusability, and accessibility. Beatty frames these principles as core values that distinguish HyFlex from general blended delivery and help prevent "HyFlex in name only" implementations (Beatty, 2010, 2019). Learner choice requires meaningful participation alternatives and an explicit mechanism for students to select modes. Equivalency requires learning activities that provide comparable learning opportunities across participation modes, even if the activities are not identical. Reusability emphasizes the systematic use of learning artifacts, recordings, and learning resources across modalities to support students who participate differently across time. Accessibility emphasizes practical access to participation and learning resources across modes, including technology access and course design choices that reduce barriers to engagement. These principles provide a basis for examining how HyFlex is described and enacted in existing studies.

Beatty's principles, however, remain unclear regarding their reflection in Philippine studies. Research on this topic has grown across sectors and disciplines, but current studies remain scattered and vary in how they define, implement, and evaluate the approach. As a result, it is difficult to see how it has been taken up within local educational settings and policy conditions. To address this, the present study maps the existing body of research by examining where it has been implemented, how Beatty's design principles are operationalized, the reported outcomes and implementation issues, and the gaps in local evidence. In doing so, the study provides an account of the current state of research in the Philippines. It offers a basis for informing future research, institutional planning, and the design of HyFlex practice in local educational settings.

The review addresses the following research questions:
(1) What are the bibliographic characteristics of Philippine HyFlex studies?
(2) In what Philippine educational contexts has HyFlex been implemented?
(3) To what extent do Philippine HyFlex studies operationalize Beatty's HyFlex design principles?
(4) What outcomes and implementation issues do Philippine HyFlex studies report?
(5) What gaps in evidence and practice emerge from the literature?

Methodology
Research Design
This study used a scoping review guided by the Joanna Briggs Institute (JBI) and the PRISMA Extension for Scoping Reviews (PRISMA-ScR) reporting framework (Peters et al., 2020; Tricco et al., 2018). This approach is appropriate because the Philippine HyFlex literature is still developing and spans different sectors, disciplines, and publication types. Rather than evaluating the effectiveness of specific interventions, the review aims to map existing studies, describe how HyFlex has been implemented and studied, and identify gaps in the evidence. Global reviews describe broad trends and common challenges, but they do not show how HyFlex has been implemented within Philippine educational settings and policy conditions (Raes et al., 2020; Wong et al., 2023). This approach provides a clearer account of how the field has developed in the local context.

Search and Screening Process
Identification of Relevant Studies
Search was conducted across four electronic databases: Scopus, ERIC, EBSCO Education Source, and Google Scholar. The search focused on studies that explicitly used the term *HyFlex* or its close variants (hy-flex, hy flex, hybrid-flexible, hybrid flexible) and were situated in the Philippine educational context. The search strings combined three components: (1) HyFlex terminology, (2) Philippine location identifiers, and (3) teaching and learning terms relevant to educational implementation. All searches were limited to publications from 2022 to 2026 to capture post-pandemic HyFlex implementations in Philippine education. The complete search strings, fields searched, and database-specific delimitations are summarized in Table 1.

Table 1. *Replicable search strategy by source*

Source	Boolean Search String	Search Focus/Fields
Scopus	(hyflex OR "hy-flex" OR "hy flex" OR "hybrid-flexible" OR "hybrid flexible") AND (Philippines OR Philippine) AND (learn* OR teach* OR instruction OR pedagogy* OR class* OR course OR student* OR teacher* OR university* OR school)	Title, abstract, keywords
ERIC	(hyflex OR "hy-flex" OR "hybrid flexible" OR "hybrid-flexible") AND (Philippines OR Philippine) AND (learn* OR teach* OR instruction OR class* OR course OR student* OR teacher*)	Title, abstract, descriptors
EBSCO Education Source	(hyflex OR "hy-flex" OR "hy flex" OR "hybrid-flexible" OR "hybrid flexible") AND (Philippines OR Philippine) AND (learn* OR teach* OR instruction OR pedagog* OR class* OR course OR student* OR teacher*)	Title, abstract, subject terms
Google Scholar	("hyflex" Philippines) OR ("hy-flex" Philippines) OR ("hybrid flexible" Philippines)	Title and snippet, then full text
Direct Repositories and Citation Tracking	Manual search in Philippine university repositories (i.e., Animo repository, Tuklas) and citation checking in existing studies	Manual screening of titles, abstracts, and full text

The initial database search yielded 17,087 records across all databases. After limiting results to studies conducted in the Philippines, 458 records remained. Records conducted outside the Philippine context (n = 16,629) were excluded at this stage.

Identification Through Other Methods
In addition to database searches, supplementary retrieval was conducted through manual searches of Philippine institutional repositories, particularly the Animo Repository of De la Salle University and Tuklas of the University of the Philippines Diliman, and through citation tracking of included articles. This process identified six additional records, consisting of two theses, two dissertations, and two additional documents. Two of these postgraduate works were under embargo at the time of review, and only their abstracts were accessible. These records were included only when the abstracts clearly specified the Philippine setting, research design, participant group, and the manner in which HyFlex was implemented. Because this scoping review aimed to map the extent, context, and general characteristics of HyFlex research rather than conduct a detailed outcome synthesis, the information contained in the abstracts was sufficient to determine eligibility and extract the required bibliographic and contextual data. All other included studies were accessed and reviewed in full text.

Screening and Eligibility
All records retrieved from databases and repositories were consolidated in Microsoft Excel, where duplicates were identified and removed, and screening decisions were documented. First, titles and abstracts were reviewed to confirm that the study was conducted in the Philippines or involved Filipino participants. This step reduced the pool to 458 records. Second, the remaining records were screened for publication dates (2022–2026) and for an empirical focus on teaching and learning. Editorials, opinion pieces, purely conceptual discussions, and studies published prior to 2022 were excluded at this stage (n = 413). After this, 45 records met the year and empirical criteria. Third, duplicate records across databases were removed (n = 22), yielding 19 studies from the database searches. Four additional records identified through direct repository searches and 2 via citation tracking were added to the corpus, bringing the total to 25. The full identification and screening process is presented in Figure 1.
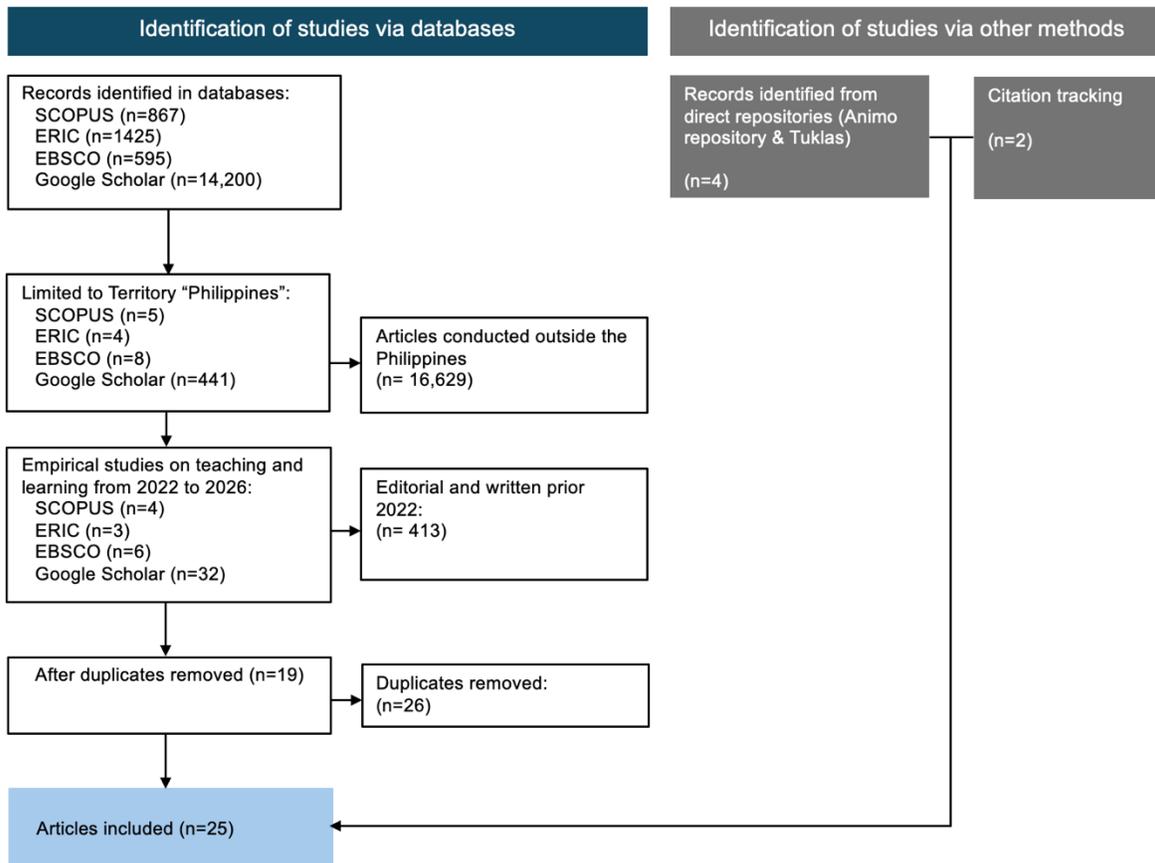
Figure 1. *Flow diagram of the search and screening process*

Analysis

All included studies were organized in Microsoft Excel via a charting form developed for this review (Peters et al., 2020). The charting form captured bibliographic information, educational context, implementation features, and reported findings. Data extraction was guided by the research questions to ensure alignment between the review's purpose and the analysis.

To address RQ1 and RQ2, a descriptive mapping approach was used. Scoping reviews commonly employ descriptive numerical summaries to present the extent and distribution of evidence (Arksey & O'Malley, 2005). Each study was coded for year of publication, publication type (journal article, thesis, dissertation), research design, and data sources. Educational context variables included level (basic education, senior high school, higher education), discipline or subject area, institutional type (public or private), and geographic location when reported. Frequency counts and cross-tabulations were generated to describe publication trends and implementation settings.

For RQ3, a directed content analysis was used. Directed content analysis is appropriate when predefined theoretical categories guide coding (Hsieh & Shannon, 2005). In this review, Beatty's four principles served as the analytic framework. Each study was examined for explicit descriptions of HyFlex implementation across learning activities, assessment practices, technology use, and participation modes. Studies were coded according to whether and how each principle was demonstrated in practice. Coding was limited to reported instructional structures rather than inferred intentions. The coding framework used and sample indicators of each principle are provided in Table 2.

Table 2. *Coding Framework for Beatty's HyFlex Design Principles*

Principle	Operational Definition	Coding Rule	Example Indicators from Studies
Learner Choice	Students can choose their mode of participation (face-to-face, synchronous online, asynchronous)	Coded only when studies explicitly describe students selecting or switching participation modes	"Students choose whether to attend in person or online"; "Flexible attendance options"; "Students shift between modes"
Equivalency	Learning activities provide comparable learning opportunities across modes	Coded when parallel or comparable learning activities are described across modalities	"Same lecture delivered to in-person and online students"; "Equivalent tasks across modes"; "Shared learning objectives"
Reusability	Learning resources are reused across participation modes	Coded when instructional materials are accessible and usable across modalities	"Recorded lectures available"; "Shared LMS materials"; "Discussion threads accessible to all students"
Accessibility	Students can access learning regardless of location or constraints	Coded when studies describe efforts to ensure access to participation and materials	"Use of LMS and video platforms"; "Support for low connectivity"; "Flexible access to materials"

RQ4 and RQ5 required synthesis across the included studies. An inductive thematic analysis was conducted to identify recurring patterns in reported findings (Braun & Clarke, 2006). During repeated reading of the included studies, segments describing student outcomes, engagement, implementation challenges, technology constraints, and institutional factors were coded. Codes were grouped into broader categories that reflected recurring themes across the corpus. These themes were reviewed and refined to ensure consistency and coherence. Research gaps were identified by examining areas of limited coverage across studies, including underrepresented educational levels, methodological concentration, and partial application of HyFlex principles. Gaps were derived from observable patterns in the mapped data rather than from assumptions beyond the scope of the included studies.

An inter-rater reliability was established for the categorical variables associated with RQ1–RQ3. Two independent coders were invited to code a subset of the included studies (n = 10) using the shared charting form and coding guide. Cohen's kappa was calculated to account for chance agreement. For bibliographic and contextual classifications related to RQ1 and RQ2, the kappa coefficient was 0.94, indicating near-perfect agreement. For the coding of Beatty's four design principles under RQ3, the kappa coefficient was 0.82, indicating strong agreement (Landis & Koch, 1977). Discrepancies were discussed and resolved through consensus before the primary researcher coded the remaining studies. Inter-rater reliability was not calculated for RQ4 and RQ5 because these involved thematic synthesis rather than a fixed categorical classification.

Results and Discussion
Profile of Included Studies

Table 3. *Summary profile of included studies*

Author (Year)	Discipline/Level	Design/Method	Participants	Main focus
Abdon-Liwanag et al. (2022)	Higher Education	Quantitative Survey	659 College Students	Student satisfaction with online learning services; recommends HyFlex as a future option
Alcalde et al. (2024)	Teacher Education	Descriptive Quantitative	25 College Students	Flexibility in handling HyFlex
Alontaga et al. (2024)	Higher Education	Survey and Author Observations	105 College Students	Student experience and implementation issues
Cinco et al. (2023)	Science Education	Qualitative Phenomenology	7 Faculty Members	Challenges teachers face in HyFlex
Conde et al. (2024)	Agriculture Higher Education	Descriptive-Developmental	979 Agriculture Students	Inputs for designing a modified HyFlex scheme; modality preferences and institutional resource needs
Awi et al. (2026)	Secondary Science Education	Empirical Evaluation of OER Integration in HyFlex	724 Students	Effect of integrating OERs on science test scores and student perceptions in a HyFlex environment
Dela Cruz et al. (2025)	Higher Education and Student Well-Being	Correlational Study	101 College Students	Self-imposed academic pressure, academic performance, and well-being in a HyFlex environment
Dimarucot (2025)	Physical Education	Quasi-Experimental	140 College Students	Fitness effects of a hybrid or HyFlex PATHFit 2 course

Bautista et al. (2023)	Maritime Education	Quantitative Descriptive Survey	CME Students	Learning preferences and challenges of maritime students in HyFlex during the "now normal"
Frago (2024)	Junior High School	Mixed-Methods Triangulation Design	64 Teachers and 169 Students	Readiness for HyFlex during post-pandemic transition; differences across groups and thematic findings
Gloria & Pelayo (2025)	General Education	Mixed-Methods	518 Students and 7 Faculty	Development and validation of a quality assurance framework for HyFlex/flexible learning
Gumasing et al. (2025)	Higher Education STEM	Quantitative Study Using PLS-SEM	600 STEM Students	Determinants of students' continuance intention in Tri-X (quality, access, support, satisfaction)
Mahinay et al. (2023)	Teacher Education	Descriptive-Correlational Survey	42 BSEd Students	Readiness for HyFlex in knowledge, skills, attitude, and values; relationships among dimensions
Marcelo (2023)	Senior High School Science	Action Research with Pre/Post Measures and Survey	160 Grade 11 Students	Use of OERs to support HyFlex in science instruction; effects on knowledge and inquiry
Mata & Marasigan (2024)	Physical Education	Qualitative Case Study	6 Junior High School PE Teachers	Implementation of PE curriculum using HyFlex; opportunities and challenges.
Mobo et al. (2022)	General Education	Quantitative Descriptive	48 Students	Identified student preferences across in-person, synchronous, and asynchronous modes
Mondido & Quibral (2025)	Physical Education	Qualitative Phenomenological	Pre-Service PE Teachers	Lived experiences of PE interns implementing HyFlex integration
Quibral et al. (2024)	Physical Education (PWD Students)	Qualitative; Phenomenological	Students with Disabilities	Experiences of PWD students in HyFlex learning
Ramos et al. (2025)	Teacher Education	Quantitative	776 Preservice Teachers	Examined relationships among e-learning readiness, engagement, and perceived learning performance
San Pablo (2025)	Mathematics	Mixed-Methods	365 Students	Developed and validated the SEHL questionnaire
Sy & Acama (2025)	Senior High School	Qualitative	100 Grade 12 Students	Student experiences in HyFlex; modality preference, digital divide, home distractions, and support needs
Tanucan et al. (2025)	Physical Education	Qualitative; Phenomenological	33 PE Teachers	Teachers' lived experiences implementing HyFlex in PE
Tortola (2024)	Higher Education Teaching	Qualitative; Hermeneutic Phenomenology	10 College Teachers	Teachers' perceptions, coping strategies, and instructional challenges in HyFlex implementation
Villanueva (2024)	Mathematics	Mixed-Methods	Students and Teacher Implementer	Examined how Accountable Talk supports adaptive reasoning in HyFlex using Cultural-Historical Activity Theory
Villanueva & Caalim (2024)	Higher Education	Instrument Development and Validation	460 Students	Developed and validated a HyFlex perception scale measuring teacher support, engagement, efficacy, and utilization

The number of studies increased from 2022 to 2025, with one study already published in 2026, suggesting continued research activity (see Figure 2). This shows that HyFlex has become more visible in Philippine education as institutions continued flexible learning after the pandemic. However, the increase in publications does not mean that the field is already well developed. It shows that more studies are beginning to document and examine its implementation in practice.

As shown in Table 3 and Figure 3, research in the Philippines is concentrated in higher education. Most studies were conducted at the college level (76%), with fewer in junior high school (20%) and only a small number in senior high school (4%). No study focused on HyFlex at the elementary level. This pattern likely reflects differences

in institutional capacity. Colleges and universities generally have better access to learning management systems, digital platforms, and institutional support for flexible delivery. In contrast, the limited number of studies in basic education suggests that it has not yet been widely examined in school settings, where infrastructure, curriculum demands, and classroom conditions are different.
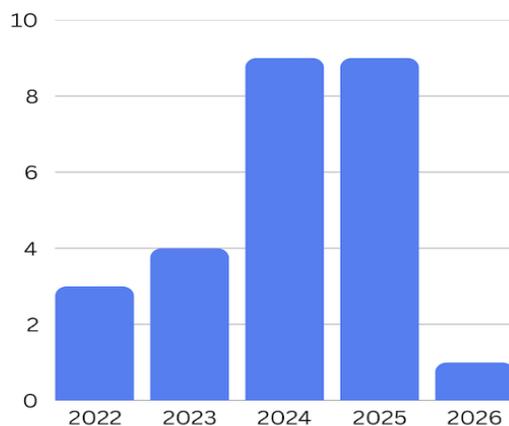

Figure 2. *Annual distribution of the selected studies*

The studies cover several subject areas, including teacher education, physical education, science, mathematics, maritime education, agriculture, and general education. A large proportion (32%) examined HyFlex as a general implementation across courses or programs rather than within a specific subject. Among subject-specific studies, physical education accounted for 20%, followed by science and teacher education at 16% each. Mathematics accounted for 8%, and maritime education and agriculture each accounted for 4%. This shows that HyFlex is often treated as a general instructional approach rather than as a design within specific subjects. As a result, there is limited evidence on how learning processes differ across disciplines, even though subjects require different forms of interaction and assessment.
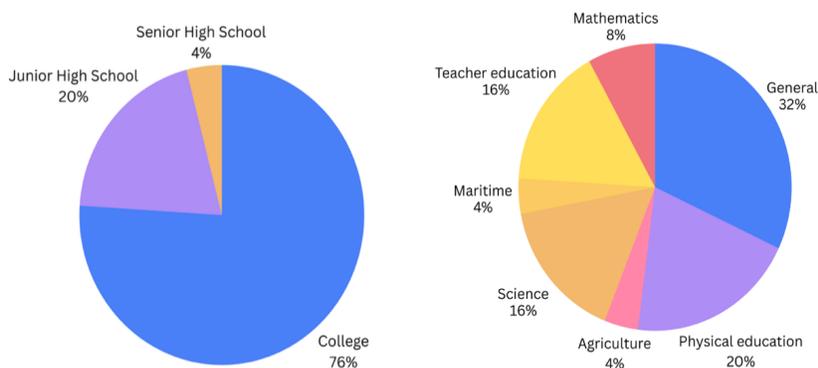

Figure 3. *Distribution of the studies based on level (left) and discipline (right)*

The uneven distribution across levels and disciplines points to gaps in current research. The absence of studies at the elementary level and the limited number in secondary education show that research has not yet captured how flexible participation works across the full education system. The focus on general implementations also suggests the need for more studies that examine how it is designed and used within specific subjects. In terms of research design, quantitative surveys and correlational studies are the most common, followed by qualitative and mixed-methods approaches. This shows that most studies focus on describing perceptions, experiences, and relationships among variables rather than examining instructional design in detail. While these approaches provide useful baseline information, they give limited insight into how courses are structured and how learning happens across different modes.

Sample sizes vary, from small qualitative cases to large-scale surveys with several hundred participants. This reflects different research purposes, from exploring classroom experience to measuring student perceptions. Across studies, common focus areas include student experiences, readiness, engagement, performance, implementation challenges, and instrument development. These findings show that current research in the Philippines is largely descriptive, with fewer studies examining how courses are designed and sustained over time.

Conceptualization of HyFlex in Philippine Studies
Across the included Philippine studies, HyFlex was not consistently defined. Instead, many papers clarified its meaning by describing the participation modes available in the course or class (e.g., in-person, synchronous online, and asynchronous options), which aligns with the study's screening rule that HyFlex must be described and not only labeled (Alcalde et al., 2024; Mahinay et al., 2023). This pattern suggests that HyFlex is often understood in terms of observable participation formats rather than as a clearly defined course design approach. As a result, the concept is grounded more in practice than in shared theoretical understanding.

Several studies provided explicit "mode-based" definitions. For example, some described HyFlex as offering online synchronous, online asynchronous, and in-person modes within the same course, with students choosing the mode that fits their situation (Alcalde et al., 2024). Others described it in terms of core features, such as the option for students to participate virtually or in person and the inclusion of face-to-face, synchronous online, and asynchronous online classes (Mahinay et al., 2023). In an institutional implementation context, it was also described as a classroom arrangement that allows students to attend online, face-to-face, or asynchronously, emphasizing learner choice across participation modes (Alontaga et al., 2024). These descriptions show that studies tend to define HyFlex through its flexible participation structure. However, defining it mainly through modes can blur the distinction between HyFlex and other forms of hybrid or flexible learning, especially when the underlying design principles are not specified.

Descriptions of core features appeared more consistently than formal definitions. Learner choice was commonly stated as the ability to attend either in person or online, with some studies also noting asynchronous participation. Concurrent delivery was often implied by references to teaching both in-person and online groups in the same class session, including practical challenges that arose when teachers managed two groups simultaneously (Cinco et al., 2023; Tanucan et al., 2025). This emphasis on visible features suggests that implementation is often shaped by immediate classroom demands, such as managing multiple groups and ensuring participation, rather than by planned design structures. As a result, key elements of HyFlex may be present in practice but not clearly articulated in the studies.

Implementation descriptors clustered around a few recurring patterns. One pattern framed HyFlex as a "three-option" setup (in-person attendance, live videoconferencing, and recorded sessions or asynchronous access), sometimes described as "hybrid-flexible" and treated as synonymous with HyFlex. A second pattern emphasized the classroom technology that enables dual-mode synchronous participation, such as cameras, microphones, and videoconferencing platforms that connect remote and in-person students (Alcalde et al., 2024; Cinco et al., 2023). A third pattern described it as a dual-group teaching arrangement (an in-person group and an online group), as evidenced by teacher accounts of attention splits and device or setup demands. These patterns show that HyFlex is often conceptualized in terms of how it is delivered and managed in the classroom. However, when the focus is placed mainly on delivery and technology, the design dimension of HyFlex becomes less visible, making it difficult to determine whether the implementation follows a structured model or simply reflects a flexible delivery arrangement.

Operationalization of Beatty's HyFlex Design Principles
Each study was coded as present, partial, or not reported depending on whether the principle was clearly implemented, partially described, or not addressed. Some studies were coded with more than one principle. The frequency of these codes is presented in Figure 4.
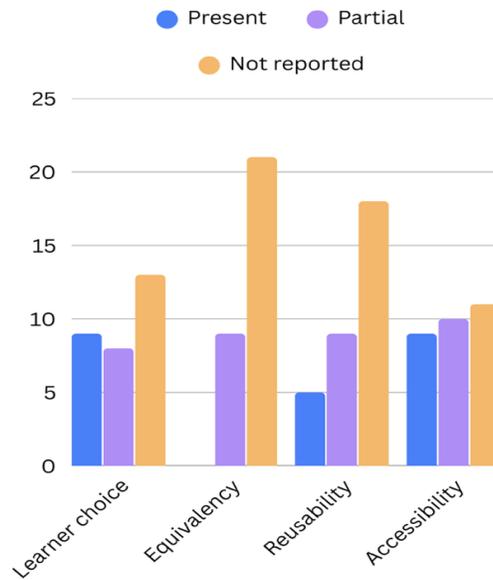
Figure 4. *Frequency of Beatty's HyFlex Design Principles Reported in the Reviewed Studies*

Learner Choice

Learner choice was the most consistent principle in the reviewed studies. It was explicitly reported in 9 studies, partially described in 8, and not reported in 13. When present, learner choice was operationalized as allowing students to decide how they would participate in a class session, typically through in-person attendance, synchronous online participation, or asynchronous access to learning materials. Some studies described this as students selecting their preferred participation mode at the beginning of a class or switching modes depending on their circumstances. In other cases, learner choice appeared indirectly through references to flexible attendance or participation options, without detailing how the choice was structured within the course. This shows that flexibility in participation is the most visible and consistently implemented feature of HyFlex in the reviewed studies. It also suggests that many implementations prioritize giving students access options. However, when learner choice is described only in general terms, without explaining how it is structured or supported, it becomes difficult to determine how meaningful or consistent that choice is across the course.

Equivalency

Equivalency was less frequent. It was partially described in 9 studies, while 16 studies did not report evidence of this principle, and none explicitly described it as fully implemented. In the studies where equivalency appeared, it was operationalized by providing parallel learning activities or comparable learning experiences for students attending in different modes. These included conducting the same lecture simultaneously for in-person and online students, using videoconferencing tools to connect both groups during class sessions, or assigning similar tasks to students regardless of their participation mode. However, many studies did not specify whether learning outcomes, assessment tasks, or interaction opportunities were intentionally designed to be equivalent across modalities. This suggests that, while multiple participation modes are present, they are not always supported by deliberate design to provide comparable learning experiences. In many cases, equivalency is assumed rather than explicitly planned. As a result, differences in learning conditions across modes may remain unexamined, even when similar activities are provided.

Reusability

Reusability was reported in 5 studies, partially reported in 9 studies, and not reported in 18 studies. When present, it was operationalized by recording and reusing instructional materials, such as lecture videos, presentation slides, and learning modules, which students could access across participation modes. Some studies also described the use of learning management systems or shared repositories in which instructional resources were uploaded and reused across multiple course sessions. In several cases, reusability was inferred from studies that reported making online materials or recorded lectures available to students who could not attend a particular class session.

The limited reporting on reusability suggests that instructional materials are often made available across modes

but are not always designed for systematic reuse. In many cases, reuse appears as a practical response to student absence or access issues rather than as a planned design feature. This indicates that the potential of reusability to support continuity across participation modes is underdeveloped in the reviewed studies.

Accessibility

Accessibility was the most frequently described principle after learner choice. It was present in 9 studies, partially described in 10, and not reported in 11. In the reviewed studies, accessibility was operationalized primarily through technology and infrastructure that enabled participation across locations, such as videoconferencing platforms, learning management systems, and digital learning materials. Several studies also framed accessibility in terms of internet connectivity, device availability, or institutional support, emphasizing that HyFlex enabled students to continue participating in class despite geographical or technological constraints. This pattern shows that accessibility is closely tied to the practical conditions of implementation. Much of the attention is on ensuring that students can connect to instruction despite infrastructure limitations. While this supports participation, it also indicates that accessibility is often addressed at the level of technology and access rather than as part of a broader design for inclusive learning across modes.

The distribution of these principles shows that HyFlex implementation in the reviewed studies is uneven. Learner choice and accessibility are more frequently described, while equivalency and reusability are less consistently reported. This suggests that many implementations prioritize flexibility in access and participation, while design considerations for learning quality and cross-mode consistency receive less attention.

Reported Outcomes and Implementation Issues

Reported outcomes

Across the included studies, outcomes were reported in several recurring forms. Some studies reported learning performance or achievement-related outcomes, including changes in test scores, performance indicators, or course-related outcomes (Awi et al., 2026; Dimarucot, 2025; Ramos et al., 2025; San Pablo, 2025; Villanueva, 2024). These studies provide direct evidence of learning effects, but they remain limited in number compared to other types of outcomes. Other studies reported outcomes such as engagement and participation, commonly measured through self-report scales, participation indicators, or engagement constructs linked to learning performance (Ramos et al., 2025; San Pablo, 2025; Villanueva & Caalim, 2024). A few studies also reported satisfaction and perceived effectiveness, typically framed as student experiences of HyFlex learning, perceived utility, or perceived quality of delivery (Abdon-Liwanag et al., 2022; Alontaga et al., 2024; Gumasing et al., 2025; Villanueva & Caalim, 2024). These patterns show that most outcomes focus on how students experience HyFlex rather than on how learning changes over time.

In addition, a smaller set of studies reported outcomes related to persistence or continuance intention, focusing on whether students intended to continue using HyFlex systems or environments (Gumasing et al., 2025). Some studies also reported outcomes linked to well-being or academic pressure, alongside performance-related measures, within HyFlex learning contexts (Dela Cruz et al., 2025). Several studies treated outcomes as readiness, capability, or flexibility to function in HyFlex, reporting readiness dimensions or student capacity to manage its demands (Frago, 2024; Mahinay et al., 2023; Alcalde et al., 2024). These results suggest that HyFlex outcomes in the reviewed studies are largely described in terms of perceptions, self-reports, and short-term indicators. While these provide useful information about student experience, they offer limited evidence on how learning processes and outcomes develop over time or across participation modes.

Implementation Issues

Implementation issues were reported across both basic education and college settings, with several common categories. The most frequently described issues related to connectivity and infrastructure, including internet stability, device availability, and technology access constraints that affected participation and learning continuity (Sy & Acama, 2025; Mobo et al., 2022; Bautista et al., 2023; Tanucan et al., 2025; Mata & Marasigan, 2024). These issues show that access remains a central condition shaping how HyFlex operates in practice.

Studies also reported classroom orchestration challenges, particularly in managing simultaneous in-person and online groups, coordinating interaction, and sustaining attention across modes (Cinco et al., 2023; Tanucan et al., 2025; Tortola, 2024; Alontaga et al., 2024). Related to this, some studies described workload and preparation demands, including increased planning requirements, instructional adjustments, and monitoring demands for

teachers and students (Tanucan et al., 2025; Tortola, 2024; Mondido & Quibral, 2025). These patterns indicate that HyFlex teaching requires additional instructional effort and coordination beyond traditional classroom setups.

A further set of issues involved participation equity, including differences in engagement and learning conditions between in-person and online learners, uneven participation opportunities, and constraints experienced by specific learner groups (Sy & Acama, 2025; Quibral et al., 2024; Mata & Marasigan, 2024; Frago, 2024). Some studies also noted platform and system limitations, such as constraints imposed by learning management systems, videoconferencing tools, and institutional systems, which shaped the learning experience (Gumasing et al., 2025; Alontaga et al., 2024). These issues suggest that even when participation is flexible, learning conditions are not always comparable across modes.

In addition, several studies reported issues related to assessment and monitoring, including difficulty checking participation, tracking progress across modes, and aligning assessment procedures with HyFlex arrangements (Mata & Marasigan, 2024; Tanucan et al., 2025; Alcalde et al., 2024). Finally, some studies framed implementation issues in terms of institutional readiness and policy or quality assurance needs, including the need for clearer standards, support structures, and formal mechanisms for HyFlex delivery (Gloria & Pelayo, 2025; Conde et al., 2024). These implementation issues show that HyFlex is shaped not only by design choices but also by practical constraints in technology, classroom management, and institutional support. While flexibility allows participation across modes, it also introduces challenges in coordination, equity, and instructional workload that require deliberate planning and support.

Gaps in Evidence and Practice
The mapping of the 25 studies also revealed several gaps in the current body of HyFlex research in the Philippines. These gaps relate to the coverage of educational contexts, the design fidelity of HyFlex implementation, and the methods used to study HyFlex environments.

Coverage Gaps
The distribution of studies across educational levels shows a strong concentration in college settings, with only a small number conducted in junior high schools and very limited representation in senior high schools. No study in the dataset focused exclusively on elementary-level HyFlex implementation. This pattern shows that current evidence is largely shaped by higher education contexts, where institutional resources and infrastructure are more available. As a result, there is limited understanding of how HyFlex operates in school settings, where classroom conditions, curriculum structures, and resource constraints differ.

Gaps also appear across disciplines. While some subject areas, such as physical education, science, and teacher education, were represented, many studies examined HyFlex as a general institutional practice rather than within specific disciplinary contexts. This suggests that HyFlex is often treated as a modality or delivery solution rather than as a subject-specific design problem. As a result, several subject areas remain underrepresented, and there is limited evidence on how learning processes differ across disciplines when implemented through HyFlex.

Geographic reporting was also uneven. Many studies did not clearly report the regional context or institutional location, and some described implementation only at the institutional level without specifying the broader educational context. This limits the ability to compare practices across regions and reduces the usefulness of the evidence for understanding how HyFlex is implemented across different parts of the Philippine education system.

Design Gaps
The analysis of Beatty's HyFlex design principles showed uneven reporting of design elements across studies. Learner choice and accessibility were more frequently described, while equivalency and reusability were less consistently reported. This pattern indicates that many implementations focus on access and participation flexibility, but give less attention to how learning experiences are designed across modes.

In many studies, HyFlex was mentioned as a flexible or hybrid modality without explaining how learning experiences were structured to be equivalent across participation modes or how instructional materials were reused across modalities. Several studies also used the term without providing a clear definition or detailed description of how the model was implemented. In some cases, it was described only in terms of mixed participation modes (e.g., online and face-to-face), without specifying how students could select modes or how

the modes operated concurrently. These patterns show variability in how HyFlex is interpreted and implemented, and suggest that design principles are not always explicitly used to guide practice.

Method Gaps
The review also showed several patterns in the research methods used to study HyFlex. Many studies relied primarily on self-report data, such as surveys, perception measures, or interviews. While these approaches provide useful descriptions of student and teacher experiences, they offer limited evidence on how learning outcomes develop or how learning processes differ across participation modes.

Comparative designs were also limited. Only a small number of studies compared HyFlex learning with other instructional formats or examined differences across participation modes. In addition, most studies examined implementation within single courses, single institutions, or short implementation periods. This results in short-term snapshots of HyFlex practice rather than longer-term observations. These patterns indicate that current research provides an initial understanding of HyFlex, but does not yet offer strong evidence on its sustained effects or comparative value across instructional contexts.

Limitations
Some limitations must be considered. First, it included only studies published between 2022 and 2026 to focus on post-pandemic HyFlex implementations. Earlier studies using different terminology for flexible or hybrid learning may therefore have been excluded. Second, the search strategy required the explicit use of the term *HyFlex* or its variants. Studies describing similar flexible learning arrangements without using this label may not have been captured. Third, although multiple databases and institutional repositories were searched, some grey literature or institutional reports may remain inaccessible. Some postgraduate works were included solely on the basis of abstract information due to embargo restrictions, which limited the available detail. Fourth, coding of Beatty's principles relied on how studies described their instructional structures. If certain HyFlex features were implemented but not clearly reported, they may have been coded as partially reported or not reported. Finally, as a scoping review, the study aimed to map the extent and characteristics of the literature rather than evaluate methodological quality or determine causal effects. The findings, therefore, describe patterns in the evidence but do not assess the strength of individual studies.

Conclusion

This scoping review shows that HyFlex learning in the Philippines is still developing. Its use has grown across disciplines and settings since 2022, but research remains focused on higher education and is mostly descriptive. This suggests that this approach has been used mainly to address immediate teaching needs, rather than as a fully planned course design. The uneven attention to Beatty's design principles, especially equivalency and reusability, shows that many implementations prioritize access and flexibility but pay less attention to how learning is structured across modes.

These findings matter for practice and planning. Teachers and institutions should not treat HyFlex only as a delivery option. It is a design task that requires alignment of activities, assessments, and interactions across modes. Attention to equivalency can help ensure that students have comparable learning experiences. Reusability can support continuity and reduce workload. Without these, the approach risks becoming a flexible setup without a clear learning design. At the policy level, clearer guidance is needed. Existing policies from CHED and DepEd support flexible learning, but they do not explain how HyFlex should be designed, implemented, and evaluated. Guidelines and quality standards can help institutions move toward more consistent practice.

The review also points to issues in curriculum design. HyFlex requires careful planning of how subject-specific learning works across modes. Current research gives limited attention to differences across disciplines. Future studies should examine how it supports learning in specific subjects, where interaction, practice, and assessment differ. Research should also move beyond description to examine how HyFlex courses are designed and evaluated. More work is needed on equivalency and reusability, which remain underreported. There is also a need for studies in basic education and other underrepresented areas. Future research can use comparative designs, direct measures of learning, and longer-term approaches to understand better how HyFlex develops over time.

Contributions of Authors

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