



Flexible Attendance Policies and Learning Continuity

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Abstract

Class attendance remains strongly associated with academic performance in higher education, yet physical presence is not synonymous with learning continuity. The longstanding meta-analysis by Credé, Roch, and Kieszczynka found substantial relationships between college attendance and both class grades and grade-point average, while more recent longitudinal and course-level studies continue to identify positive associations between attendance and academic outcomes. At the same time, rigid attendance requirements can create disproportionate barriers for students managing chronic or episodic health conditions, disability, paid employment, caring responsibilities, commuting, financial constraints, or other circumstances that do not necessarily reflect weak academic commitment. Recent higher-education research therefore increasingly raises a more nuanced question: how can institutions preserve the educational benefits of participation while ensuring that a temporary inability to occupy a physical classroom does not unnecessarily sever a student's connection to learning?

This study develops an Adaptive Learning-Continuity Attendance Framework in which attendance expectations are paired with clearly defined alternative participation and recovery pathways. A synthetic population of 800 university students and 16,000 student-week observations was modeled across four attendance-policy conditions: rigid threshold-based attendance, unstructured flexibility, flexible attendance with formal catch-up pathways, and an adaptive continuity policy integrating equivalent participation, rapid academic reconnection, instructor outreach, assessment-recovery options, and progressive intervention when learning engagement declines. Outcomes included learning access, continuity following absence, participation quality, academic belonging, assessment recovery, academic accountability, course-completion readiness, and unresolved learning-loss risk.

The adaptive continuity condition achieved a simulated composite continuity score of 90.7 compared with 60.2 for rigid attendance and 64.9 for unstructured flexibility. The findings illustrate an important distinction. Rigid policies preserved a strong accountability signal but produced greater continuity loss following unavoidable absence, whereas unrestricted flexibility increased access but weakened participation consistency and academic accountability. The strongest modeled architecture combined flexibility with explicit expectations regarding how missed learning would be recovered.

Keywords: flexible attendance, learning continuity, higher education, student attendance, HyFlex learning, inclusive education, student engagement, academic belonging, attendance policy, adaptive learning



1. Introduction

Attendance has traditionally functioned as one of higher education's most visible indicators of student participation. Its educational relevance is supported by a substantial evidence base. Credé, Roch, and Kieszczynka's meta-analysis of college attendance found correlations of approximately .44 between attendance and class grades and .41 between attendance and GPA across the studies they synthesized. More recent research continues to find positive academic relationships. Ha's 2024 fixed-effects study reported a significant positive impact of class attendance on academic performance, while a 2025 study examining attendance together with learning-platform use found that in-class participation and out-of-class digital engagement had complementary relationships with course success. These findings provide a legitimate educational reason for universities to value attendance rather than treating presence as administratively irrelevant.

The difficulty arises when attendance becomes a proxy for learning rather than one pathway through which learning occurs. Students may miss scheduled classes for reasons that have little relationship with motivation or intellectual commitment. Lowe and colleagues' 2025 multi-institution qualitative study of English higher education identified financial pressure, paid employment, commuting costs, course design, teaching quality, health-related circumstances, and access to online materials among factors affecting decisions about in-person attendance. Their participants also emphasized that whether a class appeared to provide learning value influenced decisions to attend. Turner and colleagues' 2018 work on commuter students similarly argues that dominant university participation models can exclude students whose daily mobility and time structures differ from residential-campus assumptions and identifies appropriate flexibility in attendance as one area requiring institutional consideration.

The problem is especially visible when attendance rules interact with health, disability, or caring responsibilities. Current university accessibility guidance commonly recognizes that episodic conditions may occasionally prevent physical attendance even when students remain capable of continuing their studies through alternative means. A 2020 U.S. Government Accountability Office report on higher-education disability support also identified problems arising from outdated institutional flexible-attendance policies, illustrating that policy design can affect whether reasonable adjustments function effectively in practice. Flexible attendance should therefore not be framed as reduced academic expectation. In an appropriately designed system, students remain accountable for learning outcomes even when the route through which participation occurs temporarily changes.

Flexibility itself is not automatically protective. HyFlex learning provides an important evidence base because it gives students choices among physical, synchronous-online, or asynchronous participation while attempting to maintain equivalent learning outcomes. Mahmud's 2021 systematic review found that well-implemented HyFlex courses can sustain engagement and academic performance comparable with traditional face-to-face approaches and that students value flexibility for managing time, location, illness, and other constraints. The same review, however, emphasizes risks involving weaker social presence, isolation, communication difficulties, self-regulation demands, and instructor workload. Flexibility therefore succeeds when alternative pathways are intentionally designed; simply recording a lecture and declaring attendance optional does not necessarily provide equivalent learning.



2. Objectives of the Study

2.1 To Examine Attendance Through a Learning-Continuity Perspective

The first objective is to examine whether physical attendance alone provides a sufficient basis for evaluating engagement or whether attendance policies should additionally account for continuity of access, recovery of missed learning, participation quality, and subsequent academic performance.

2.2 To Compare Rigid, Unstructured, and Structured Flexible Attendance Models

The second objective is to compare four attendance-policy architectures according to learning access, continuity after absence, participation, belonging, assessment recovery, academic accountability, and risk of unresolved learning loss.

2.3 To Develop an Adaptive Attendance and Reconnection Framework

The third objective is to construct a policy model in which unavoidable absences trigger clearly defined learning-reconnection pathways while repeated disengagement triggers supportive academic intervention rather than either automatic punishment or indefinite flexibility.

3. Review of Literature

3.1 Attendance, Participation, and Academic Achievement

The association between attendance and academic performance is well established, but interpretation requires care. Credé and colleagues' meta-analysis established one of the strongest quantitative foundations for the attendance–achievement relationship in college education. More recent research has generally continued to support the educational relevance of attendance. Ha's 2021 analysis found a positive effect on academic performance after accounting for student and course fixed effects, and a 2020 observational study reported strong differences in examination success across attendance bands while appropriately cautioning against causal interpretation.

Attendance can contribute to learning through several mechanisms. Students encounter instructor explanation, formative questioning, immediate feedback, peer discussion, demonstrations, practical experiences, and cues about disciplinary priorities. Recent research on active learning in UK higher education similarly emphasizes that regular attendance creates opportunities for immediate clarification, collaborative problem-solving, and active participation. Attendance may therefore matter because of the educational experiences associated with presence rather than because the act of entering a room independently produces learning.

This distinction is supported by research linking attendance with digital learning engagement. A 2020 study found that attendance and learning-platform activities had complementary relationships with course success, with platform engagement partly mediating the association between attendance and final grades. This suggests that physical participation and asynchronous academic preparation should not always be treated as competing forms of engagement.

However, the educational value of attendance differs across instructional activities. Donald and colleagues' 2022 research on practical classes in health-professional education highlights the importance students place on practical learning while also questioning whether mandatory attendance hurdles are the most appropriate mechanism for securing participation. Their paper discusses alternatives including



scheduling flexibility and accommodation of personal and health needs. A laboratory, clinical simulation, studio critique, seminar, lecture, and recorded informational session may therefore justify different attendance expectations. A defensible policy should consequently ask not only how often students attend, but what irreplaceable learning takes place during the session.

3.2 Flexible Participation, HyFlex Learning, and Learning Continuity

HyFlex education provides a useful conceptual foundation for structured attendance flexibility. Beatty's HyFlex design model is organized around learner choice, equivalency, reusability, and accessibility, with students able to participate through different modes while working toward common learning outcomes. The model is especially relevant to attendance policy because it demonstrates that flexibility can be embedded in course architecture rather than managed as a series of individual exceptions.

Mahmud's 2020 systematic review synthesizes empirical HyFlex research published from 2019 through 2021. The review concludes that well-designed HyFlex learning can maintain engagement and academic performance broadly comparable with face-to-face learning while improving students' ability to manage time, location, illness, and competing commitments. Importantly, the review does not conclude that flexibility is sufficient by itself. Students' engagement depends on self-regulation, instructor presence, community, technological support, and meaningful alignment among modes.

Barr and colleagues' recent HyFlex research likewise emphasizes that flexible mode choice places responsibility on learners to make appropriate decisions about how they access course information, build relationships, and seek assistance. This makes self-regulation an essential component of flexible attendance. A student who misses a session requires not merely access to a recording but a clear understanding of what must be completed to remain academically current.

Flexibility can also improve inclusion. Lowe and colleagues found that students valued online materials because they allowed learning to continue during illness and accommodated competing demands, while warning that the availability of equivalent content online can alter students' perceptions of whether physical attendance is necessary. Mansi's 2026 study similarly describes flexible learning as having a dual role: it can widen inclusion for diverse and commuting students while potentially weakening shared presence and community cohesion.

3.3 Attendance Policy, Belonging, Equity, and Student Circumstances

Attendance policies also have relational consequences. Delaney and Ashton examined staff and student views of a University of Surrey attendance policy and found connections among attendance monitoring, student wellbeing, and belonging. Their study suggests that attendance data can function as a signal for supportive contact rather than merely as evidence for sanctions. This distinction is important because the same attendance record can support very different institutional responses.

A punitive interpretation may state that repeated absence demonstrates noncompliance. A supportive interpretation asks whether the attendance change indicates that a student is experiencing barriers or gradually disengaging. These approaches need not be mutually exclusive. Universities can maintain clear expectations while treating attendance change as a reason for conversation before applying academic consequences.



Recent research reinforces the importance of contextual interpretation. Lowe and colleagues found that financial circumstances and employment affected attendance choices, with some students balancing significant paid work alongside full-time study. Turner and colleagues' 2026 analysis of commuter students argues that institutional structures frequently reflect assumptions derived from residential student participation and identifies flexible attendance among potential policy responses. Research on student carers similarly continues to document the difficulty of reconciling higher-education participation with unpaid caring responsibilities.

The equity implications are particularly important for students with episodic disabilities or chronic conditions. University accessibility offices commonly recognize modified attendance as an individualized adjustment when acute episodes temporarily affect attendance. A universal learning-continuity architecture may reduce the number of situations in which students must repeatedly negotiate access after every absence, while still preserving individualized accommodations when more extensive adjustment is required.

The literature does not therefore support a simplistic choice between mandatory attendance and complete flexibility. Attendance matters; flexibility also matters. The unresolved design question is how to preserve the educational functions associated with attendance without making physical presence an unnecessarily rigid gatekeeper to continued learning.

4. Research Methodology

4.1 Simulation Design and Student Profiles

The study adopts a simulation-based comparative design involving 800 synthetic higher-education students across a 16-week semester. Each modeled student contributed 20 decision or learning-continuity observations, generating 16,000 synthetic student-week records.

The cohort represented variation in commuting burden, paid-work commitments, caring responsibilities, episodic health disruption, ordinary short-term illness, digital access, self-regulation, and prior academic confidence. These variables were included as methodological factors and should not be interpreted as demographic findings.

Table 1: Simulated Attendance Policy Models

Attendance Policy Model	Attendance Expectation	Response to Absence	Catch-Up Provision	Accountability Structure
Rigid attendance threshold	High physical-attendance requirement with fixed absence limit	Absence recorded; penalty after threshold	Materials may be available but no standardized recovery route	Compliance primarily measured through physical presence
Unstructured flexibility	Physical attendance broadly	Student independently decides how to	Recorded or uploaded resources available	Limited verification of continued learning

Attendance Policy Model	Attendance Expectation	Response to Absence	Catch-Up Provision	Accountability Structure
	optional	recover	inconsistently	
Flexible attendance + formal catch-up pathways	Attendance strongly encouraged; approved flexibility built into course design	Missed sessions activate structured catch-up tasks	Equivalent resources, summaries, peer interaction, make-up activity where appropriate	Learning recovery documented
Adaptive learning-continuity policy	Session-specific attendance expectations based on educational necessity	Routine absence activates recovery pathway; recurring absence triggers supportive review	Multimodal continuity resources, asynchronous participation, alternative practical arrangements where academically possible	Engagement judged through presence, completion, participation, recovery, and learning evidence

4.2 Learning-Continuity Measures

Seven outcome dimensions were modeled.

- Learning access represented whether students could obtain essential instructional content and activities despite temporary absence.
- Continuity after absence represented successful reconnection with the course's intellectual sequence within seven days of a missed session.
- Participation quality measured meaningful engagement in discussions, practical activities, problem solving, peer learning, or equivalent online interaction.
- Academic belonging represented continued connection with classmates, instructors, and the course community.
- Assessment recovery measured whether temporary disruption could be managed without creating disproportionate cascading penalties in later assessments.
- Academic accountability represented the degree to which students remained responsible for completing learning activities and meeting stated outcomes despite attendance flexibility.
- Course-completion readiness represented the modeled probability that the student remained academically current enough to progress successfully through the course.



An additional unresolved continuity-loss rate measured the proportion of absence episodes after which required learning was not successfully recovered.

4.3 Adaptive Learning-Continuity Procedure

The adaptive policy began by classifying scheduled sessions according to the degree to which the learning experience could reasonably be reproduced through another pathway.

A conventional content lecture with comprehensive learning resources was considered comparatively substitutable. A clinical procedure, laboratory safety exercise, live performance, supervised placement, collaborative studio critique, or other activity in which physical participation was integral to the learning outcome was classified as less substitutable. This distinction prevented flexibility from being interpreted as a universal right to replace every learning activity with a recording.

When a student missed a substitutable session, the system activated a short recovery pathway. This could include the core recording or reading, a short concept check, participation in an asynchronous discussion, review of a peer-generated summary, or completion of an equivalent learning activity. Where a high-value interactive session was missed, the student could receive a make-up practical, alternative group exercise, consultation, or later equivalent opportunity where feasible.

Repeated absence without completion of recovery activities triggered supportive outreach. The instructor or adviser examined whether the student was experiencing access barriers, misunderstanding expectations, or progressively disengaging. The model therefore distinguished three states: absence with successful continuity, absence requiring intervention, and academic disengagement.

No attendance penalty was triggered solely by an unavoidable isolated absence in the adaptive condition. However, flexibility did not remove assessment requirements or learning outcomes. No inferential p-values are reported because the data are synthetic. Real validation would require longitudinal policy comparison, course-level clustering, accommodation analysis, student interviews, instructor workload measures, attendance data, LMS evidence, and verified learning outcomes.

5. Analysis

5.1 Comparative Learning-Continuity Outcomes

The rigid attendance condition produced the strongest isolated academic-accountability score at 86, but its performance was substantially weaker in learning access, continuity after unavoidable absence, and assessment recovery.

Unstructured flexibility improved access but produced lower participation quality and the weakest accountability score of the four conditions. Formal catch-up pathways substantially improved the balance between flexibility and academic expectations. The adaptive learning-continuity model produced the strongest overall profile.

Table 2: Simulated Outcomes Across Attendance Policy Models

Attendance Policy Model	Learning Access	Continuity After Absence	Participation Quality	Academic Belonging	Assessment Recovery	Academic Accountability	Course-Completion Readiness	Unresolved Continuity Loss ↓
Rigid attendance threshold	54	43	72	61	45	86	66	28%
Unstructured flexibility	82	69	58	55	71	49	67	22%
Flexible attendance + catch-up pathways	89	86	78	75	88	79	86	10%
Adaptive learning-continuity policy	94	93	88	87	92	90	93	5%

The comparison demonstrates that neither rigid attendance nor unrestricted flexibility maximized learning continuity. The rigid condition maintained a visible expectation but treated missed presence and missed learning almost as the same event.

The unstructured flexible condition separated the two concepts but did not provide sufficient architecture for recovering missed learning. The two structured flexible approaches performed better because flexibility was tied directly to academic action.

5.2 From Attendance Recovery to Learning Recovery

The simulated difference between the rigid and adaptive conditions is driven primarily by what happens after absence. Under a threshold policy, the institution knows that a student was absent but may have no systematic evidence regarding whether the missed learning was later recovered.

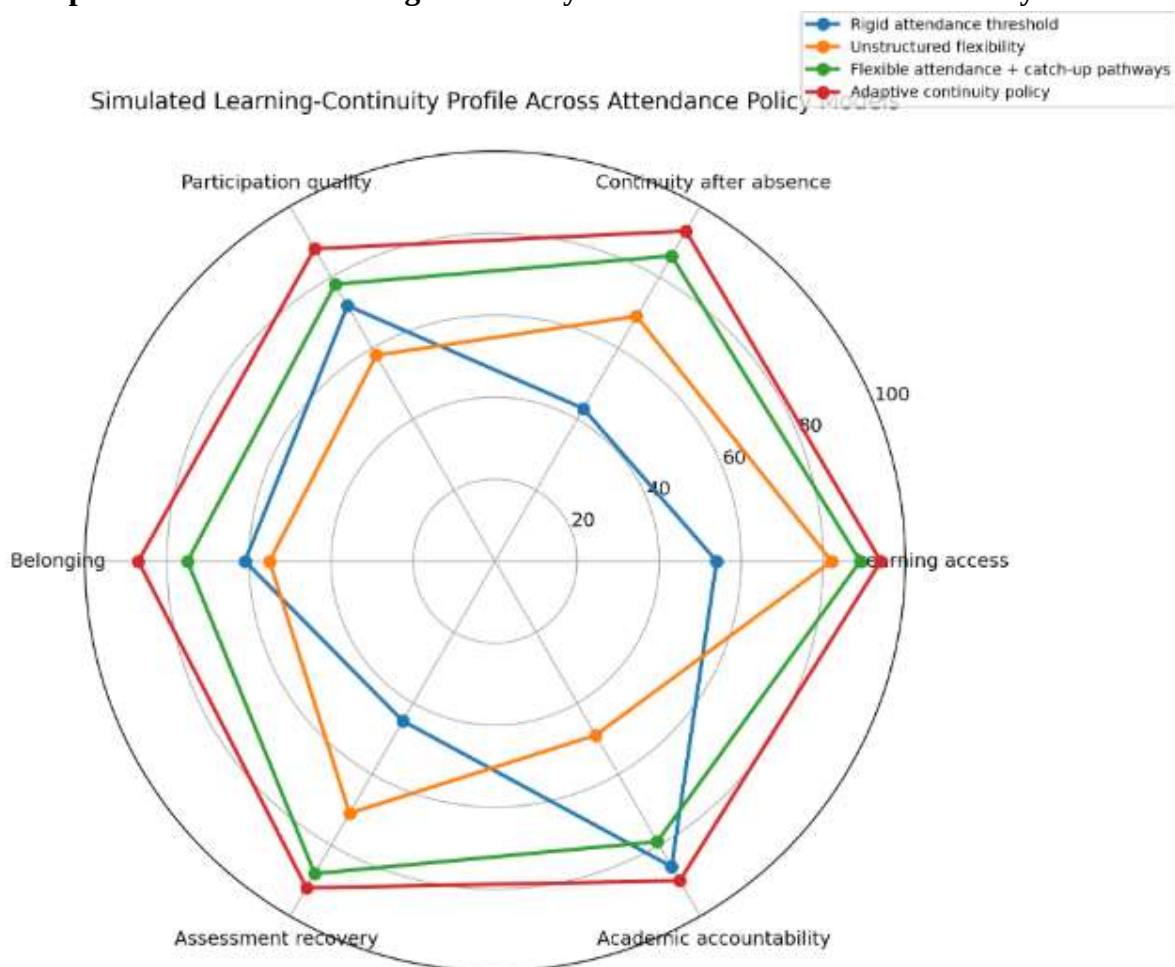
Under the adaptive policy, the educational event itself determines the recovery requirement. This approach is consistent with HyFlex's principle of equivalency. The objective is not for every pathway to look identical but for each pathway to provide a realistic opportunity to achieve the same learning

outcomes. The analysis also confirms the importance of structured self-regulation. Flexibility without deadlines or reconnection expectations produced substantially weaker accountability.

Mahmud's systematic review similarly reports that students with stronger self-regulation are better positioned to benefit from HyFlex autonomy, whereas flexibility can contribute to procrastination or disconnection when competence and social support are weak. Flexible attendance policy should therefore define both a right to continuity and a responsibility to reconnect.

5.3 Multidimensional Attendance-Policy Performance

Graph 1: Simulated Learning-Continuity Profile Across Attendance Policy Models



The polar profile demonstrates why a single attendance percentage is insufficient for evaluating policy quality.

The rigid attendance model performs strongly on accountability but poorly on access, continuity after absence, and assessment recovery. Unstructured flexibility demonstrates the opposite imbalance. Access is comparatively high, but participation, belonging, and accountability weaken because flexibility has not been connected to systematic academic reconnection. The formal catch-up model creates a more balanced profile.



The adaptive continuity policy produces the strongest simulated performance across all six plotted dimensions: learning access 94, continuity after absence 93, participation quality 88, belonging 87, assessment recovery 92, and academic accountability 90.

The graph illustrates the study's principal analytical position: a strong attendance policy should not maximize physical presence at the expense of continuity, nor maximize flexibility at the expense of participation. It should maximize the probability that students remain meaningfully connected to learning.

6. Discussion

6.1 Attendance Should Be Valued for the Learning It Enables Rather Than for Presence Alone

The findings support a reorientation of attendance policy from administrative presence toward educational participation. The substantial attendance–performance relationship documented by Credé and colleagues and supported in later studies provides strong justification for universities to encourage attendance. The conclusion should not, however, be that physical presence deserves academic credit independent of what occurs during the session. Attendance is valuable when it provides access to explanation, feedback, interaction, practice, community, and disciplinary participation that support learning.

This principle places responsibility on course design as well as on students. Lowe and colleagues found that students themselves distinguished among sessions according to perceived learning value and sometimes reported that particular in-person experiences offered little beyond materials already available online. If universities want students physically present, the educational purpose of that presence should be clear. Active seminars, simulations, laboratories, supervised practice, group problem solving, demonstrations, critiques, and formative dialogue provide stronger reasons for attendance than replicating material already available asynchronously.

This does not imply that lectures have no value. Instructor explanation, examples, spontaneous questioning, disciplinary emphasis, and social connection can make a live lecture substantially richer than slides alone. The policy implication is that attendance requirements should be activity-sensitive. Requirements should be strongest where presence contributes directly to the intended learning outcome and more flexible where equivalent access can be designed responsibly.

Donald and colleagues' recent research on practical classes supports this distinction. Their study recognizes the importance of practical teaching while questioning reliance on mandatory attendance hurdles and discussing scheduling flexibility and accommodation as alternatives. The relevant academic question is not “Was the student sitting in the room?” but “Did the student successfully undertake the learning that this session was designed to provide?”

6.2 Flexibility Requires Deliberate Reconnection, Belonging, and Self-Regulation Support

The second implication is that attendance flexibility should never mean educational invisibility. The unstructured flexible condition in the simulation demonstrates why. Students could access content but were less consistently connected to interactive activities, peers, and accountability structures.

Contemporary HyFlex research identifies the same tension. Mahmud's systematic review concludes that flexibility and autonomy can benefit engagement, but only when accompanied by



competence, instructor support, social presence, and meaningful community. Students who feel isolated or lack self-regulation may use flexibility in ways that unintentionally deepen disengagement.

Learning continuity therefore requires a reconnection architecture. After absence, students should know what was missed, which elements are essential, how those elements can be recovered, and when the recovery should occur. A short structured catch-up task is more educationally useful than a folder containing several hours of recordings with no indication of priority.

Social reconnection matters as well. Flexible students should not become peripheral members of the class. If they miss collaborative learning, a later discussion, peer response, group consultation, or alternative interaction may be needed. Mansi's 2020 research captures this trade-off by describing flexibility as widening inclusion while potentially weakening community cohesion.

The importance of belonging also changes how institutions should interpret attendance data. Delaney and Ashton found that attendance monitoring can contribute to student-support processes and belonging when used in a relational rather than merely punitive manner. A sequence of absences should therefore generate a question before it generates a judgment. The institution needs to determine whether the student is continuing learning through another route, facing temporary barriers, or progressively disconnecting.

This creates a more sophisticated accountability model. A student may have 70% physical attendance yet remain fully current through structured alternative participation. Another may have 90% recorded attendance while contributing minimally and demonstrating substantial learning gaps. Attendance remains valuable evidence, but it is interpreted alongside learning continuity.

6.3 Flexible Attendance Can Strengthen Equity Without Weakening Academic Standards

The third implication concerns equity. Recent higher-education research makes clear that attendance decisions are affected by circumstances outside the classroom, including paid work, commuting, health, finances, and caring commitments. A policy that treats every absence as evidence of weak commitment risks converting structural or temporary constraints into academic penalties.

Flexible attendance can reduce this problem, particularly for students with episodic disabilities or health conditions. Current accessibility practice recognizes that some students may periodically be unable to attend because of acute manifestations of a documented condition. The educational objective should be to preserve access while determining which essential learning experiences still need to be completed.

Equity does not require eliminating course requirements. A student who misses a clinical placement, laboratory procedure, performance assessment, or other essential experiential component may still need to complete an equivalent activity. Flexibility concerns the route and timing through which the outcome is achieved, not whether the outcome exists.

This distinction is particularly important because excessively permissive policies can produce their own inequities. Students with strong self-regulation and extensive academic experience may navigate optional participation successfully, while students who are already uncertain about university learning may disappear from the course rhythm. HyFlex research indicates that flexible modes do not benefit all students automatically and that self-regulation and support influence outcomes.



The strongest policy therefore combines universal design with targeted support. All students can access structured continuity resources after ordinary disruptions. Students requiring formal accommodations can receive individualized flexibility beyond the general framework. Students showing persistent disengagement receive proactive academic support rather than simply accumulating absences.

Such a model also protects faculty workload. Not every absence should generate a bespoke instructional plan. The course should contain predesigned continuity pathways for common situations, while exceptional circumstances receive individualized attention. This converts flexibility from an improvised concession into an instructional-design feature.

7. Conclusion

Class attendance remains educationally important, and the evidence does not support treating physical participation as irrelevant. Students who attend consistently often perform better, and many forms of learning depend substantially on interaction with instructors, peers, laboratories, studios, demonstrations, and practical environments. A serious flexible-attendance policy must therefore begin by acknowledging rather than dismissing the educational value of presence.

The limitation of rigid attendance policy is that presence and learning can become incorrectly treated as equivalent. Students may face temporary health disruption, disability-related barriers, employment responsibilities, caring obligations, or commuting difficulties while remaining committed to academic progress. Recent higher-education research demonstrates that contemporary attendance patterns emerge from a combination of student circumstances, course design, financial pressures, learning preferences, and availability of digital resources.

The simulation presented in this study illustrates a possible policy response. Rigid attendance produced strong accountability but weak continuity following unavoidable absence. Unstructured flexibility improved access but weakened participation and accountability. Structured catch-up pathways performed substantially better, while the adaptive learning-continuity policy achieved the strongest overall profile. These numerical outcomes are synthetic and should not be interpreted as empirical effect sizes.

The proposed Adaptive Learning-Continuity Attendance Framework replaces the binary distinction between “present” and “absent” with a more educationally meaningful sequence: present participation, flexible participation, learning recovery, and supportive intervention. The student remains responsible for the learning outcome even when circumstances temporarily alter the mode through which that outcome is achieved.

This model also provides a clearer role for attendance monitoring. Attendance data should identify possible disruption, but they should not independently diagnose motivation. Repeated absence becomes a signal for academic reconnection and inquiry. If the student is successfully maintaining learning through alternative routes, the system records continuity rather than failure. If learning is not being recovered, increasingly structured human support can be activated.

The central conclusion is that flexible attendance should protect continuity, not normalize disconnection. Effective policy should communicate that attendance is educationally valuable while recognizing that physical presence cannot always be maintained continuously by every capable student.



The strongest university attendance policy is therefore one that preserves three elements simultaneously: meaningful participation, equitable access, and clear academic accountability.

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