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Construction and Practical Application of a "Publicity–Participation–Guarantee–Feedback" Closed-Loop Promotion Model for Mass Trampoline in Chinese Universities

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Abstract

Mass trampoline refers to low-impact, music-synchronized group rebounding performed on small-diameter fitness trampolines. Although physiologically accessible and affectively rewarding for young adults, it remains largely absent from Chinese university curricula and campus sport systems, where four mutually reinforcing barriers—risk misperception, limited institutional recognition, thin resource provision, and episodic, unevaluated programming—sustain a self-reinforcing equilibrium. Drawing on the theory of planned behavior, self-determination theory, physical literacy, and closed-loop management, this conceptual study develops an integrated promotion model in which publicity, participation, guarantee, and feedback function as four coupled modules rather than as sequential administrative steps. The model specifies the internal architecture of each module, the interfaces at which coordination typically fails, and the decision rules that sustain iterative correction. A sequential mediation pathway is proposed in which kinesthetic enjoyment, social connectedness, and self-efficacy transmit the effect of practice to physical literacy and sustained exercise behavior, with perceived safety modeled as a first-stage boundary condition rather than as a mediator. A three-tier goal structure, a four-layer content sequence, and a staged application roadmap with progression gates operationalize the model under heterogeneous resource conditions. The framework contributes a mechanism-based account of how an emerging sport may be institutionalized in higher education, and identifies the empirical propositions on which such institutionalization depends.

Keywords: Mass Trampoline, Closed-Loop Promotion, University Physical Education, Physical Literacy, Sequential Mediation, Health Promotion

Introduction

The "Healthy China 2030" Planning Outline places national health at the center of the development strategy and explicitly calls for the deep integration of nationwide fitness with

public health services (Lin et al., 2025). Subsequent policy guidance, most notably the 2020 Opinions on Comprehensively Strengthening and Improving School Sports Work in the New Era, directs higher education institutions to enrich the supply of physical education content, narrow the gap between what institutions offer and what students actually seek, and improve the effectiveness of fitness interventions (Dong & Sun, 2026). That concern is reinforced by international guidance on physical activity and sedentary behavior, which sets out the volume and intensity of movement required for health benefit and thereby raises the question of whether campus provision is adequate to deliver it (World Health Organization, 2020). In practice, however, university physical education in China remains concentrated in track and field, ball games, gymnastics, and martial arts (Tsai & Zhou, 2017). These disciplines continue to serve foundational purposes, yet they no longer exhaust student demand. A growing body of student feedback and institutional experience indicates that undergraduates increasingly seek movement forms that are novel, technically accessible, socially embedded, and affectively rewarding, and that the mismatch between conventional offerings and this demand is one reason why elective physical education struggles to convert enrollment into lasting exercise habits.

Mass trampoline—referred to in Chinese practice as *dazhong bengchuang* and in international fitness settings as rebounding—is a distinct formation that is frequently confused with two others (Hura, 2025). Competitive acrobatic trampoline is a FIG discipline organized around aerial difficulty and execution scores. Commercial trampoline parks are leisure venues that combine large interconnected trampolines, foam pits, and unstructured free play (Teague et al., 2025). Mass trampoline, by contrast, is aerobic in orientation. It consists of rhythmic, music-synchronized movement performed on small-diameter individual trampolines, usually in group formats, with a low skill floor and a controlled bounce pattern. Early physiological work documented that rebound exercise distributes acceleration differently from running and produces substantial oxygen uptake at comparatively low joint loading, which makes it attractive for young adults who avoid high-impact activity (Hoppeler, 2016). In affective terms, the combination of rhythmic synchronization, vestibular and proprioceptive stimulation, and musical framing produces immediate sensory reward, a property that maps closely onto what the sport psychology literature identifies as enjoyment—the most consistent proximal correlate of adherence in voluntary exercise settings (Bi et al., 2026; Stevens et al., 2020). University campuses are unusually favorable hosts for this activity. They concentrate a young population within walking distance of indoor venues, already possess a physical education administrative structure with scheduling and credit authority, and contain student organizations capable of peer-based mobilization.

Yet mass trampoline is almost entirely absent from Chinese university curricula, extracurricular management systems, and campus sport branding. The absence is not explained by student disinterest. It is explained by four barriers that reinforce one another. The first is cognitive. Because public attention to trampoline is dominated by reports of injuries sustained in unregulated commercial parks, administrators, parents, and students tend to transfer an undifferentiated risk image onto any activity bearing the word trampoline, even though the injury profile documented for recreational trampoline use is largely associated with unsupervised multiple-user jumping, acrobatic attempts, and inadequate matting rather than with instructor-led fitness rebounding (Baker et al., 2023). The second is institutional. Mass trampoline appears in no national university physical education standard,

no institutional course catalog, and no extracurricular activity framework, which means it has no legitimate line in a budget, no teaching assignment, and no insurance category. The third is resource-based. Equipment, dedicated or convertible indoor space, certified instruction, and accident insurance are all required simultaneously, and the absence of any one of them blocks the others. The fourth is operational. Where activities do occur, they take the form of open days, festivals, or one-off trial classes that generate visibility without progression, retention measurement, or feedback.

These four barriers form a self-sealing equilibrium. Weak legitimacy suppresses investment; thin investment compromises safety provision; compromised safety reconfirms the risk stereotype; and the stereotype further weakens legitimacy. Interventions that address a single barrier, such as a demonstration event, a donated equipment set, or a single elective, tend to be absorbed by the equilibrium and leave no trace after one semester (Behrens et al., 2022). Breaking it requires a system that acts on all four barriers simultaneously and continuously, which is precisely what a closed-loop promotion model is designed to do.

Four theoretical traditions inform such a system, and their value lies in the fact that each answers a different question rather than restating the same one. The theory of planned behavior addresses why a student forms an intention to try. Behavior is proximally governed by intention, which is a function of attitude toward the behavior, subjective norms, and perceived behavioral control (La Barbera & Ajzen, 2021). Applied here, publicity works on attitude and normative belief, while guarantee works on perceived behavioral control. The theory predicts intention formation well but says little about the quality or durability of the motivation once behavior begins. Self-determination theory supplies that missing account. When autonomy, competence, and relatedness are supported, motivation shifts along a continuum from external regulation toward identified and intrinsic regulation, and this shift is what sustains voluntary physical activity (Rhodes et al., 2019). The two theories are not competitors. Perceived behavioral control overlaps substantially with competence need, and integrative models have shown that need satisfaction predicts intention partly through its effect on attitudes and perceived control (Al-Jubari, 2019). Physical literacy theory provides the third element, which is a specification of outcomes rather than of processes. It defines physical literacy as motivation, confidence, physical competence, knowledge, and understanding of movement, developed across the lifecourse and manifested in a disposition to value and maintain movement participation (Edwards et al., 2017). This is more informative than either behavioral intention or need satisfaction alone, because it locates the target of instruction in the person's relationship with movement rather than in a single behavior. Closed-loop management, operationalized through the plan–do–check–act cycle, supplies the fourth element and shifts attention from the individual to the institution. A program survives only if evaluation data are routinely fed back into design decisions. In short, the theory of planned behavior explains why a student tries, self-determination theory explains why a student continues, physical literacy theory specifies what changes in the student, and closed-loop management explains how an institution keeps the conditions for both in place.

Existing scholarship leaves these elements unconnected. Research on trampoline has concentrated on biomechanics, physiological response, and, more recently, the epidemiology of commercial park injuries, while questions of educational integration, instructional design, and institutional governance have received little attention (Kraft & Furlong, 2020). Research

on campus sport promotion has typically examined single levers in isolation, such as curriculum reform, club development, facility investment, or publicity campaigns, without modeling their interdependence, and has therefore been unable to explain why programs that succeed in one institution fail in another with similar resources. The consequence for administrators is a design vacuum. There is widespread agreement that emerging sports should be introduced, and almost no guidance on how to introduce one without producing either a safety incident or a short-lived novelty.

The study responds to that vacuum by constructing an integrated promotion model for mass trampoline in Chinese universities and by specifying how it is applied in practice. Its contribution is threefold. First, it repositions the problem. The unit of intervention is not a course or an event but a coupled system of publicity, participation, guarantee, and feedback, and the model is built to specify the interfaces at which such systems fail. Second, it clarifies the mechanism by distinguishing a sequential mediation chain of kinesthetic enjoyment, social connectedness, and self-efficacy from a boundary condition, namely perceived safety, a distinction with direct design consequences that the existing literature tends to blur. Third, it converts the model into a staged application roadmap with progression gates, so that an institution with limited venues, staff, and budget can begin at a defined entry point and scale without dismantling what it has built. The study pursues three research objectives:

RO1: To structure the “publicity - participation - guarantee - feedback” closed-loop model into core dimensions for mass trampoline promotion targeting university students, and to specify how each dimension should be adapted to the physical, psychological, and digital-behavioral characteristics of young adults.

RO2: To delineate the mediating mechanisms through which mass trampoline practice influences university students’ physical literacy and sustained exercise behavior, and to identify the conditions that bound those mechanisms.

RO3: To construct and operationalize a stratified, sustainable implementation and application framework for mass trampoline under the resource conditions of Chinese universities.
Accordingly, the study addresses three research questions.

RQ1: For mass trampoline promotion targeting university students, into what core dimensions should the “publicity–participation–guarantee–feedback” closed-loop model be structured, and how should each dimension be adapted to the physical, psychological, and digital-behavioral characteristics of young adults?

RQ2: Through what mediating mechanisms does mass trampoline practice influence university students’ physical literacy and sustained exercise behavior, and what conditions bound those mechanisms?

RQ3: Given the resource conditions of Chinese universities, how can a stratified, sustainable implementation and application framework for mass trampoline be constructed and operated?

Two delimitations frame the present study. The study is conceptual rather than empirical: it integrates theory and extant evidence into a model and an application roadmap, and the mediation pathway and progression gates it proposes are stated as propositions for subsequent testing rather than as observed findings. The analysis is also bounded by the institutional arrangements of Chinese higher education—procurement, insurance, and instructor-certification regimes within which the guarantee module is embedded—so whether the four-module architecture travels to other institutional systems remains an open question that the framework is itself designed to expose.

Addressing these objectives matters at two levels. For practice, it supplies university administrators with an ordered account of what must be in place before, during, and after the introduction of an unfamiliar activity, precisely at the point where existing guidance falls silent. For theory, it offers a case through which the institutionalization of emerging sports—and the coupling of individual-level motivation with organizational-level maintenance—can be examined with unusual clarity. The remainder of the paper proceeds accordingly: the Findings and Discussion section develops the closed-loop model and its four coupled modules (Q1), specifies the sequential mediation pathway and the boundary role of perceived safety (Q2), and sets out the stratified implementation framework with its staged roadmap and progression gates (Q3), before limitations and conclusions close the paper.

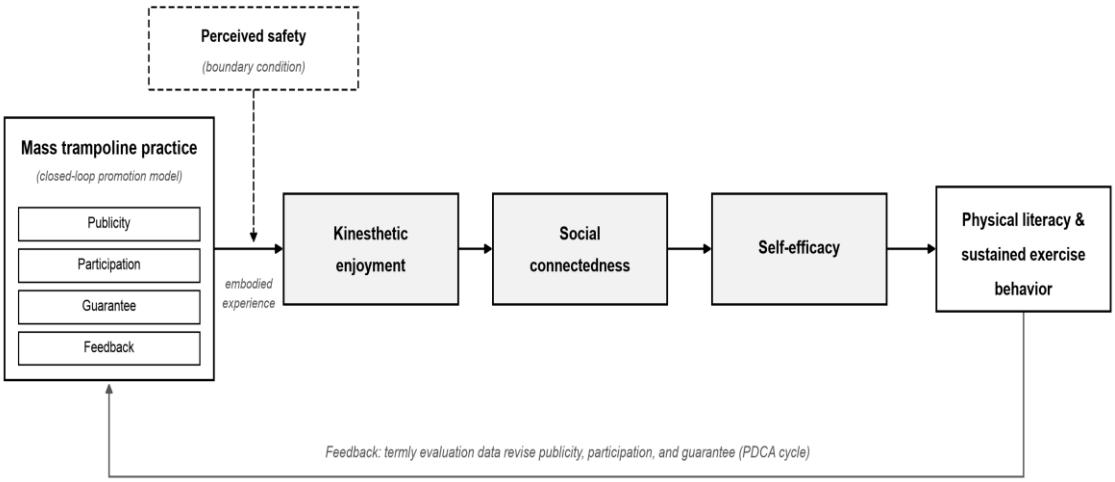


Fig 1. Conceptual framework

Findings and Discussion

Q1: For mass trampoline promotion targeting university students, into what core dimensions should the closed-loop model be structured, and how should each dimension be adapted to the characteristics of young adults?

The closed-loop model is composed of four modules—publicity, participation, guarantee, and feedback—but its defining property is not the number four. It is the requirement that each module produce, as a by-product, the input that a neighboring module needs. Publicity produces not merely awareness but calibrated expectations that participation can actually meet. Participation produces not merely attendance but a demand signal specific enough to inform resource allocation. Guarantee produces not merely objective risk control but visible,

interpretable safety that a nervous first-time participant can read. Feedback produces not merely data but decisions. A program in which any of these by-products fails is formally a loop but functionally four disconnected activities, and it behaves exactly like the episodic programming it was meant to replace.

Publicity as the affective and informational entry point

Publicity is the module most often reduced to a single campaign; analytically, however, it performs three functions that are better sequenced than conflated. The corrective function requires publicity to draw a categorical distinction between mass fitness rebounding, competitive acrobatic trampoline, and unregulated commercial trampoline parks. Until that distinction is established, any safety claim the program advances is likely to be read as institutional advocacy rather than as evidence. The normative function positions participation as normal and desirable within a student's reference group, an operation of particular leverage because subjective norms are among the more readily altered determinants of intention for low-cost, socially visible behaviors (La Barbera & Ajzen, 2021). The affective function generates anticipated enjoyment sufficient to convert interest into a first visit. Sequencing matters because the three are not interchangeable. Correction without normativity yields awareness without uptake, whereas normativity without correction recruits students whose expectations the course cannot meet (Bierdz, 2026). The characteristic failure mode of campus publicity is accordingly what may be termed hype inflation, that is, promotion which foregrounds spectacle, aerial time, and intensity and thereby produces early drop-out that contaminates the normative message for subsequent cohorts (Sykes, 2016). Effective publicity in this domain is therefore conspicuously unglamorous. It shows a same-age peer rather than an athlete sustaining a repeatable rhythm, states the actual intensity and progression, displays the safety measures rather than asserting that the activity is safe, and routes interested students to a low-commitment first contact rather than to a registration form.

Channel selection should follow student information habits, which means short video for reach, campus official accounts and class-group messaging for legitimacy, peer-generated content for credibility, and instructor demonstration for vicarious modeling (Li et al., 2013), with the explicit understanding that administrative announcements alone reliably fail to move either attitude or norm in this population. Publicity also has a second audience that student-facing channels do not reach. Institutional decision makers, including university leadership, physical education administrators, and student-affairs offices, determine whether the activity acquires legitimacy, a budget line, and an insurance category (Maarse et al., 2016). They are persuaded by a different instrument, namely a written feasibility and value case that documents equipment footprint and unit cost, specifies the safety architecture and the regulations it satisfies, and connects the activity to institutional priorities such as student health, campus culture, and the reduction of sedentary screen time (Deliens et al., 2015). Programs that omit this step frequently succeed in generating student interest and then stall at the point of approval, which is why the feasibility case belongs to the publicity module rather than to a later administrative stage.

Participation as four carriers plus a digital layer

The participation module is the carrier of embodied experience and therefore the module in which value is either created or lost. It is organized around four delivery carriers—events,

courses, clubs, and competition—supplemented by a digital layer, and the five elements are ordered by commitment level rather than by skill level. The events element consists of open, no-commitment sessions embedded in existing campus sports festivals and themed experience weeks, and its purpose is first contact rather than instruction (Steiner, 2016). The course element consists of a sixteen, to eighteen-week credit-bearing elective with stated learning outcomes, assessment, and a published syllabus (Gilyard, 2024). The club element consists of a student association with weekly sessions, which is where retention is actually decided. The competition element consists of a squad and a low-difficulty campus competition series that sustains advanced participants and supplies visible role models for the elements below, deliberately rewarding participation and routine quality rather than aerial difficulty. The digital layer consists of check-in, heart-rate display, movement clips, and opt-in ranking, extending the program's social presence beyond scheduled hours.

The critical design property is not the existence of five elements but the presence of a handhold between each pair. A handhold is a scheduled next session, a named contact, a stated prerequisite, or a visible path. Ladders without handholds leak, and a program that recruits two hundred students into taster sessions and converts eight into the elective has not achieved reach; it has achieved turnover. Self-determination theory predicts where the leaks occur (Aviste & Niemiec, 2023). The transition from events to courses demands a competence signal, because the student must believe they can manage the course, and the transition from courses to clubs demands a relatedness signal, because the student must experience membership rather than enrollment. The handholds should therefore be designed to deliver exactly those signals (Batista et al., 2025).

Guarantee as legible safety

The guarantee module addresses the barrier that most directly suppresses participation, and its organizing principle should be legibility rather than mere adequacy. Objective risk control that participants cannot see does not reduce anxiety and therefore does not change behavior. Legible safety has five components. Institutional guarantee means a three-document core, namely campus safety management regulations, a venue and equipment inspection and maintenance system, and an emergency response plan, together with a health screening and informed-consent procedure carrying a declared exclusion list, all approved before the first session rather than drafted after it. Personnel guarantee means a composite instructional team in which certified trampoline or social-sports instructors work alongside physical education teachers and at least one staff member with current first-aid certification, with a stated student-to-instructor ratio (Yoon, 2025). Facility and equipment guarantee means fitness trampolines meeting recognized safety standards, adequate matting and clearance, guardrails where configuration requires them, density limits, and inspection logs kept at daily, weekly, and termly frequencies. Risk-management guarantee means a prohibition on acrobatic elements, graded progression of bounce height and duration, mandatory warm-up and cool-down, load monitoring for students returning from injury or illness, and a cap on simultaneous users per unit area. Insurance guarantee means integration into the campus sports accident insurance scheme plus event-specific cover for large-scale activities. Only the first four of these are also forms of communication, which is why signage, displayed certification, a visible instructor ratio, and a published incident procedure belong to the design rather than to administration.

Feedback as a mechanism for decisions

What separates a closed loop from a repeated event is the feedback module, and it tends to fail in a characteristic way. Institutions collect data without assigning anyone the right to act on it, and the result is what may be called a data graveyard. Six domains appear sufficient. Reach covers publicity exposure and the composition of first contacts. Participation covers enrollment, attendance, retention to mid-term and to end-of-term, and conversion between carriers. Fitness covers the indicators named in the course syllabus, measured at entry and exit. Psychological experience covers enjoyment, perceived safety, sense of belonging, and self-efficacy, measured with short validated scales administered anonymously. Safety covers incident counts and types, exposure hours, and near-miss reports, with near-misses read as leading indicators rather than as noise. Management covers cost per participant-hour, venue utilization, instructor hours, and equipment condition (Wang, 2024). Cadence runs from session-level logging through monthly dashboard review to a termly Mass Trampoline on Campus Operation Report, deliberated at a joint meeting of the physical education department, the youth league committee, student associations, and the venue management center. What makes the module operational is a set of pre-committed decision rules, which specify which thresholds trigger which changes, in which module, and who holds the authority to make them. Without such rules, feedback is commentary; with them, it becomes governance.

Interfaces and failure modes

The model's analytic value lies in the interfaces. At the publicity–participation interface, the risk is expectation mismatch, and the control is a single source of truth about intensity, skill demand, and safety measures used across all channels. At the participation–guarantee interface, the risk is capacity overshoot, where publicity succeeds faster than the instructor and equipment base can absorb, and the control is a recruitment ceiling tied to the certified ratio (Carranza et al., 2022). At the participation–feedback interface, the risk is measurement that stops at attendance, which cannot explain why retention falls in week nine; the control is the inclusion of experience measures and exit interviews. At the feedback–publicity interface, the risk is that evaluation findings remain internal while promotional content continues to circulate outdated claims; the control is the requirement that the termly report revise the publicity brief. These four interfaces, rather than the four modules, are where most campus programs actually break.

Q2: Through what mediating mechanisms does mass trampoline practice influence university students' physical literacy and sustained exercise behavior, and what conditions bound them?

Mass trampoline practice does not produce physical literacy or durable exercise behavior by itself. Its effects are transmitted through a chain of psychological states, and the ordering of that chain has direct design consequences. We propose three sequential mediators—kinesthetic enjoyment, social connectedness, and self-efficacy—with perceived safety specified as a boundary condition operating at the first stage of the chain, and with physical literacy and sustained exercise behavior as distal outcomes.

Treating perceived safety as a boundary condition rather than a mediator is a deliberate departure from the tendency to list all favorable perceptions as mediators (Fujimoto, 2026). Three considerations support this choice. Conceptually, perceived safety functions as a gate

that is largely formed before participation, from prior beliefs, publicity content, and the visible environment, and it determines whether a student enters the chain at all. Methodologically, a mediator must be both affected by the intervention and responsible for transmitting its effect. Perceived safety is only weakly affected by a single session, and when it is low, it eliminates the effect of practice on enjoyment rather than transmitting it. Practically, the two roles imply different interventions. A mediator is strengthened by deepening the experience, whereas a boundary condition is raised by visible design features such as certification on display, density caps, a named first-aid responder, and a published incident procedure (BAKIRCI, 2023). The model is therefore a first-stage moderated mediation, in which practice raises kinesthetic enjoyment more strongly among students with higher perceived safety, and in which the chain is effectively switched off among students with low perceived safety, regardless of program quality.

The first mediator is kinesthetic enjoyment. Rebounding offers a dense package of immediate rewards, including rhythmic synchronization with music, vestibular and proprioceptive stimulation that is unfamiliar enough to be interesting and controllable enough to be non-threatening, a low skill floor that allows most beginners to succeed within minutes, and a group format that converts individual effort into shared timing. Enjoyment is not a decorative outcome in this literature but the most consistent proximal predictor of adherence in voluntary exercise (Rodrigues et al., 2020), and in self-determination terms it is the affective signature of satisfied autonomy and competence needs (Ryan & Deci, 2022). Evidence from exercise trials grounded in the theory points the same way (Fridberg et al., 2025). The design implication is that enjoyment is fragile with respect to pedagogy. The same activity, delivered as technical drilling on bounce mechanics, with music removed and errors corrected publicly, converts a high-enjoyment activity into a low-enjoyment one without changing its physiological content. Enjoyment is also the mechanism by which a single session produces a return visit, which is the precondition for everything downstream.

The second mediator is social connectedness. Group rebounding generates the conditions that interaction ritual theory identifies as productive of emotional solidarity, namely bodily co-presence, a shared focus of attention, rhythmic entrainment, and a common emotional tone (Clayton et al., 2020). The result is the transient collective effervescence described in the classical sociology of ritual but its durable residue matters more than the transient experience. Repeated rituals build group symbols, membership boundaries, and expectations of future interaction, and this is what converts a class roster into a group with a reason to reconvene. The belongingness literature indicates that such bonds are not a pleasant by-product of physical activity but a basic condition for sustained engagement (Davis, 2026). This is why the club layer, not the course layer, is where retention is decided, and why program design should treat the formation of a stable weekly group as an explicit objective with its own indicators rather than as something that happens if students like each other. The risk at this stage is that the group becomes exclusive, since a tight cohort can convert belonging into closure and discourage newcomers in the same way that it retains members.

The third mediator is self-efficacy, and it performs the conversion from experience to disposition. Mastery experience is provided through graded progression from stable bouncing to rhythmic sequences to short choreography. Vicarious experience is provided through same-age peer demonstration in which the model is similar rather than exceptional. Verbal

persuasion is provided through instructor feedback that attributes success to strategy and practice rather than to talent. Reinterpretation of physiological states matters particularly in a novel activity where elevated heart rate and unfamiliar vestibular sensation are easily misread as loss of control (Clark, 2022). As efficacy beliefs consolidate, the activity is reclassified by the student from a campus event into a personal practice, and this reclassification is what the physical literacy literature describes as the integration of motivation, confidence, competence, and understanding into a disposition toward movement (Whitehead, 2010).

The sequential ordering is not arbitrary, and each link supplies the condition for the next. Enjoyment supplies repeated exposure, repeated exposure supplies the interaction density from which social ties form, social ties supply persistence through the competence dip that occurs when novelty fades and skill acquisition becomes effortful, and efficacy beliefs supply the self-attribution that turns persistence into identity. The progression parallels the interest development literature, in which situational interest sustained by environmental features gradually crystallizes into individual interest sustained by stored knowledge and value (Knogler et al., 2015), and it is consistent with experiential learning accounts in which concrete experience must be followed by reflective processing before it becomes a stable disposition (Neergaard et al., 2021). At the outcome end, physical literacy and sustained exercise behavior should be modeled as reciprocal rather than one-way. Competence and confidence increase the likelihood of continued participation, and continued participation in turn consolidates competence and confidence, a feedback relation documented in developmental accounts of the motor competence–physical activity relationship (Lima et al., 2017).

Four design implications follow directly. First, the first session should be engineered for enjoyment rather than for diagnostic assessment, and skill correction belongs to the second and third sessions, after the return visit has been secured. Second, motivational supports such as peer leaders, group naming, shared routines, and small public recognition should be timed to follow the student's embodied encounter with the activity rather than introduced as external obligations beforehand, so that they attach to an experience the student already owns. Third, the competence dip should be anticipated and scaffolded with a planned progression and predictable early successes, since the natural decay of novelty typically coincides with the point at which technique becomes demanding. Fourth, and most consequentially for resource allocation, investment in visible safety features yields returns twice. It directly raises the boundary condition and, through it, the effectiveness of every subsequent session.

Q3: Given the resource conditions of Chinese universities, how can a stratified, sustainable implementation and application framework be constructed and operated?

The implementation framework has four components—stratified goals, layered content, methodological innovation, and long-term resource guarantees—and it is embedded in a three-stage application roadmap that specifies what an institution does in each stage, what evidence permits progression, and what is in place before scaling. The framework assumes two empirical conditions. The first is that universities differ widely in instructor supply, equipment budget, indoor venue access, and insurance arrangements. The second is that

students enter at different points along the interest and competence continua, so that a single-level program simultaneously bores advanced participants and intimidates beginners.

Stratified goals. Three tiers replace a single course objective. The beginner tier targets perceptual experience and the reduction of safety anxiety. Its goals are that the student completes a session without distress, experiences enjoyment, and can maintain a stable basic bounce in time with music. The intermediate tier targets skill acquisition and fitness. Its goals are a repertoire of rhythmic sequences, measurable cardiorespiratory and lower-limb endurance gains, and the ability to self-regulate intensity. The advanced tier targets performance, leadership, and peer instruction. Its goals are choreographed routines, low-level competition readiness, and the competence to assist in beginner sessions (Ahmadi et al., 2026). The third tier also doubles as the institution's internal instructor pipeline, and without it the program remains permanently dependent on external staffing.

Layered content. Content follows the goal tiers in four sequential layers. The first layer consists of rhythmic and balance games that establish timing, spatial awareness, and the habit of jumping within a defined area. The second layer consists of structured rebounding modules that build cardiorespiratory endurance and lower-limb strength through interval formats. The third layer consists of music-choreography and small-group routine work, which raises competence and, because routines must be performed together, deepens collective identity. The fourth layer consists of student-led club sessions and low-level competitions, which transfer ownership and consolidate sustained participation. The layering reflects the experiential cycle. Each layer is experienced before it is reflected upon, and reflection is what allows the next layer to be metabolized rather than merely attended.

Methodological innovation. The methods are aligned with an outcome-based education logic, in which each tier's goals are stated as demonstrable outcomes and assessment is constructed to match them, and with the values dimension of the curriculum, in which courage, rule compliance, and teamwork are carried by the routines themselves rather than taught in a separate session. Four methods replace demonstration-and-repetition instruction. Music-rhythm pedagogy organizes the session around beat and phrase rather than around count and correction, which lowers the verbal load and makes synchronization the task rather than the instruction. Situational and game-based formats embed skill demands in play, which preserves enjoyment while raising load (Ke et al., 2016). Peer leadership, drawing on the advanced tier, supplies same-age models and reduces the intimidation gradient for beginners. Digital interaction, through heart-rate display, session clips, and opt-in leaderboards, extends the group's presence between sessions, which matters for a population whose social life is partly conducted online. For students with high safety anxiety or low prior sport experience, a buddy pairing and a short individual orientation session should be available, since the students most at risk of exclusion in a group format are precisely those the program most needs to retain to demonstrate equity.

Long-term resource guarantees. Four arrangements convert a funded project into a maintainable program. Phased procurement spreads equipment purchase across budget cycles and ties each increment to demonstrated utilization, which prevents both idle equipment and premature scaling. Shared venue arrangements with gymnastics, aerobics, or dance programs convert a dedicated-space requirement into a scheduling problem. Instructor

development through partnership with certified social-sports organizations or trampoline federations creates a local certification pathway rather than a permanent reliance on visiting experts (Lee Jr et al., 2020). Finally, a departmental consortium of physical education, student affairs, the youth league, student clubs, and venue management holds joint responsibility for planning, operation, evaluation, and equipment renewal, which prevents the program from being owned by a single office whose staff turnover would end it.

A three-stage application roadmap. The roadmap specifies progression by evidence rather than by calendar. Stage one, occupying the first semester, is a bounded pilot. It involves one venue, one or two credit-bearing classes, one monthly open session, an instructional team of three to four including at least one certified instructor and one first-aid-certified staff member, the safety protocol in force, and baseline data collected at entry. Progression to stage two requires that no serious adverse event has occurred, that attendance has held through the mid-term point, that entry and exit experience measures show the expected direction of change, and that the incident and near-miss log has been reviewed at least once. Stage two, spanning the following two to three semesters, scales the curriculum, formalizes the club, activates the digital layer, and establishes the consortium and insurance arrangements. Progression to stage three requires that the club can run a session without external staff, that at least two internal instructors are certified, and that unit costs per participant-hour are stable or falling. Stage three, from the fourth semester onward, institutionalizes the program. It establishes a permanent course code with credit allocation, a line item for equipment renewal, a recurring campus event with brand recognition, periodic small-scale competition, and a published promotion guide in the form of a campus promotion white paper that documents the operating model, the safety documents, and the cost structure, so that the institution's experience becomes transferable rather than personal. The gates matter more than the stages, because the characteristic failure of campus sport innovation is scaling on enthusiasm rather than on capacity, which produces the safety incident or the abandoned equipment store that then justifies the original skepticism.

Within any stage, the four modules are deployed in a deliberate order rather than simultaneously. A preparatory phase builds the institutional case and the safety documents, a delivery phase opens the participation carriers, an institutionalizing phase formalizes rules, staffing, and budget lines, and a review phase converts the term's data into revisions for the next cycle (Ponte & Cheyns, 2013). This sequencing is a deployment order, not a causal chain. Once the program is running, all four modules operate concurrently and continuously, and the value of the closed-loop formulation lies precisely in their being simultaneous. A program that performs publicity, then participation, then guarantee, and only then feedback has not closed a loop; it has held four events.

Risk register. Five risks require explicit mitigation. Injury liability is addressed through the guarantee module and event-specific insurance, with documentation practices designed to withstand scrutiny. Instructor dependency is addressed by the internal certification pipeline in the advanced tier. Equipment idleness is addressed by utilization thresholds attached to each procurement increment and by shared-venue scheduling. Novelty decay is addressed by the progression of content layers, the club structure, and the competition tier, each of which supplies a new reason to continue at the point where the previous one weakens. Equity drift is addressed by tracking participation composition by gender, prior sport experience, and

fitness level, and by treating an increasingly homogeneous participant profile as a warning indicator rather than as a sign of program strength.

Evaluation framework. Six dimensions structure evaluation, each with named indicators and a review cadence. Publicity effect covers reach, composition, and conversion to first contact. Participation effect covers enrollment, attendance, retention, and conversion between carriers. Fitness effect covers the syllabus indicators at entry and exit. Psychological effect covers enjoyment, perceived safety, belonging, and self-efficacy. Safety effect covers incidents and near-misses per exposure hour. Management effect covers cost per participant-hour, venue utilization, instructor hours, and equipment condition. The purpose of the framework is not comprehensive measurement but decision support. Each dimension is paired with a pre-committed action, so that a falling retention indicator triggers a participation review and a rising near-miss rate triggers a guarantee review.

Limitations

The study acknowledges several limitations, the first of which follows from the scope implied by its title. The model is constructed and its application specified as a staged roadmap; it has not been implemented or evaluated in a live program, so claims about feasibility, retention, and safety rest on design logic rather than on observed outcomes, and the gate criteria, including recruitment ratios, retention thresholds, and progression rules, are calibrated by judgment rather than by data. Second, the mechanism proposed here remains untested. The sequential path through kinesthetic enjoyment, social connectedness, and self-efficacy, together with the moderating role assigned to perceived safety, would require structural equation modeling with longitudinal or quasi-experimental data, supplemented by interviews with instructors and administrators and by observation of club sessions, before the ordering of the mediators can be defended against alternatives such as parallel or reciprocal effects. Third, the analysis is bounded by the Chinese university setting, in which equipment procurement, insurance, and instructor certification are arranged in a particular way. Whether the four modules, and the interfaces identified between them, operate similarly in other institutional types, in other emerging sports, and in systems with different safety governance remains an open question. Future research could also treat resource and policy conditions as measured variables rather than as design parameters, since doing so would test whether the guarantee module is as robust in practice as the framework assumes.

Conclusions

This study specifies how mass trampoline could enter Chinese university sport as a maintainable mechanism, with publicity, participation, guarantee, and feedback treated as a coupled system. Its first claim concerns the unit of intervention. What a campus program requires is not a better course or a larger event but modules that each supply the input the next one needs, and the decisive failures occur at the handoffs between them. Its second concerns mechanism. Practice reaches physical literacy and sustained exercise behavior through kinesthetic enjoyment, social connectedness, and self-efficacy, with perceived safety acting as a first-stage boundary condition, a distinction that assigns pedagogy to enjoyment, the club structure to connectedness, graded progression to efficacy, and visible design to safety. Its third concerns sustainability. Stratified goals, layered content, varied methods, and durable resources matter less as a package than as a sequence authorized by evidence at

defined gates, since campus sport innovation tends to fail by scaling on enthusiasm rather than on capacity.

Research Contribution

This study contributes to existing knowledge on both theoretical and contextual fronts. Theoretically, it reframes the introduction of an emerging sport as a problem of coupled institutional design rather than curriculum choice—locating characteristic failure at the interfaces between publicity, participation, guarantee, and feedback and thus extending institutionalization accounts of sport in higher education; it separates a sequential mediation chain of kinesthetic enjoyment, social connectedness, and self-efficacy from perceived safety as a first-stage boundary condition, where existing work lists favorable perceptions indiscriminately as mediators; and it assigns its four theoretical traditions distinct explanatory roles—intention formation, motivational quality, developmental outcome, and institutional maintenance—rather than cumulative support for a single proposition. Contextually, it converts national policy pressure for richer physical education provision into an operable form under the heterogeneous resource conditions of Chinese universities, combining a three-tier goal structure and four-layer content sequence, a legible-safety architecture that answers the risk misperception inherited from commercial trampoline parks, and a staged roadmap with progression gates that keeps adoption reversible, measurable, and maintainable. The framework thus serves as a design grammar for practitioners, an argument for treating emerging sports as infrastructure rather than events for policymakers, and a set of testable propositions on mediator ordering, the moderating role of perceived safety, and the robustness of the guarantee module for the field.

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The author declares no conflict of interest.

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