Perspectives

Student-Oriented Competency Building Module: Implications for the Improvement of Global Health Education

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ABSTRACT

In response to growing uncertainty in global health driven by geopolitical tensions, pandemics, and climate-related challenges, global health education must evolve to equip students with theoretical knowledge and core competencies, such as leadership, cross-cultural communication, and strategic thinking. This study reviews the updates to the International Health Project Management (IHPM) course and examines its three key changes: introducing a student-oriented teaching module, incorporating teamwork and role-play to promote autonomy and accountability; expanding geographic flexibility to encourage broader strategic thinking; and strengthening team dynamics through clearer role definitions and targeted support mechanisms. Students formed project teams, established internal regulations, and selected global health scenarios for project design. This revised approach fostered in-depth discussions that encouraged open-minded thinking, enabling students to move beyond disease-focused content to strategic systemic considerations. Greater group ownership also improved collaboration and accountability, addressing common teamwork challenges such as role confusion and uneven participation. However, the analytical depth varied depending on students' disciplinary backgrounds. Finally, we argue that a tiered curriculum that moves from theory to competency building can better support student growth. Overall, these findings highlight the potential of student-oriented approaches to strengthen leadership, cross-cultural communication, and strategic thinking, competencies essential for contributing to a shared future for global health.

Global health is increasingly shaped by complex, evolving factors, including geopolitical tensions, pandemics, and climate-related threats, which heighten uncertainty (*1*–*2*). The United States' (US) announcement of its withdrawal from the World Health Organization (WHO) and its decision to cease negotiations on the WHO Pandemic Agreement further complicated global health governance. For this reason, global health education should evolve to address emerging realities and to respond effectively to increasingly complex and uncertain global challenges (*3*).

With a vision of a shared health future, global health education must nurture the next generation not only with knowledge and technical skills but also, importantly, with competencies such as leadership, cross-cultural communication, and strategic thinking (*4*). Accordingly, in 2024, we transitioned our undergraduate International Health Project Management (IHPM) course from conventional, theory-based instruction to a teamwork-focused module incorporating role-play (*5*).

The module integrating teamwork and role-play was conceptually grounded in the Global Health Education Competencies Toolkit (*6*) and WHO guidelines on transformative, interprofessional education (*7*–*8*). These frameworks emphasize leadership, teamwork, communication, collaborative practice, and systems thinking, which we operationalized in the course through student-centered projects, role-play simulations, and peer-accountability mechanisms.

The course substantially improved students' competencies in global health. However, the teamwork module revealed challenges similar to those reported in prior studies (*9*), including weak leadership, communication breakdowns, and unequal workload distribution. Students also tended to focus narrowly on disease-based scenarios, highlighting gaps in leadership, communication, and strategic thinking. These observations motivated the adoption of a student-oriented teaching approach in 2025, designed specifically to address those issues.

The 2025 course introduced three major changes: 1) a student-oriented management structure to empower students with autonomy and accountability; 2) a

simulation scenario based on China's Belt and Road Initiative; and 3) refined teamwork assessment mechanisms to promote fairness and reduce internal conflicts.

This study employed a qualitative design with content analysis to examine students' written reflections and group outputs. Two authors independently coded and analyzed the qualitative materials, having participated in teaching and contributed collectively to the interpretation and synthesis of findings. Any discrepancies were resolved through discussion until consensus was reached.

Student-Oriented Teaching Module: Enhancing Autonomy

The student-oriented module provides students with genuine decision-making authority and ownership while operating within a clearly defined organizational framework that structures their learning. Students are first self-nominated as team leaders, then they serve as project-office directors, and subsequently join teams through a mutual selection process that mirrors real-world recruitment. Each team designs its own internal management system, defines roles and responsibilities, and establishes operating rules. Allowing students to create and govern these structures within a set project framework enables them to practice decision-making, negotiation, and collective rule-setting in an authentic project environment. The processes, organizational arrangements, and decisions are directed by the students rather than the instructors. The students determine team structures, role responsibilities, internal rules, workflows, and task coordination, whereas the instructors clarify core competencies in global health and provide thematic guidance and academic support. This approach ensures that the direction, pace, and mechanisms of learning are shaped by the students' choices and accountability to their peers.

First, students acquired theoretical knowledge through the XueTangX platform, where lecturers provided recorded lessons and complementary materials. The platform also included an online discussion board that allowed students to pose questions, share reflections, and seek clarification. By shifting theoretical instruction to online self-learning, instructors were able to dedicate more in-class time to discussion and process monitoring, thereby supporting the implementation of a student-oriented teaching model.

Second, teamwork within the role-play module was refined to promote student-oriented engagement. All students participated in a simulated program titled *Health System Enhancement for Pandemic Preparedness*, and each group selected a global health scenario of their choice.

As shown in Figure 1, students independently formed their teams, assigned functional roles, such as team leader, finance officer, evaluator, and communication manager, and took full responsibility for defining the duties associated with each role. They also established a project-office structure and developed internal regulations on coordination, accountability, and performance evaluation through self-directed discussion and decision-making.

Third, students submitted a concept note in week 3, and a full project proposal in week 12, each accompanied by a group presentation. Instructors jointly evaluated the quality of these submissions using two criteria: the scope of the selected topic, from disease-specific projects to broader health-system strengthening or whole-of-government approaches, and the extent to which students integrated interdisciplinary knowledge beyond public health, including policy, international relations, and social-science perspectives.

Open Geographic Selection: Encouraging Broader Topics and Strategic Thinking

Students explored a wide range of global health topics and selected field sites across different regions, including two Asian countries chosen by Groups A and C and two African countries participating in the Belt and Road Initiative chosen by Groups B and D (Table 1). For example, Group D adapted its project to the local context by selecting real communities, Ketu, Ikeja, and Alimosho, and by considering local health challenges such as malaria. The group also incorporated locally familiar communication channels, including Yoruba–English materials, and engaged community and religious leaders through SMS and WhatsApp. However, although instructors shared their field experiences in African settings during class discussions, this support may not have been sufficient for students to fully understand local health governance. Students exhibited gaps in understanding system capacities, such as they assume stable electricity and internet infrastructure, and proposing advanced tools such as blockchain or machine-learning platforms. To strengthen cross-regional adaptation,

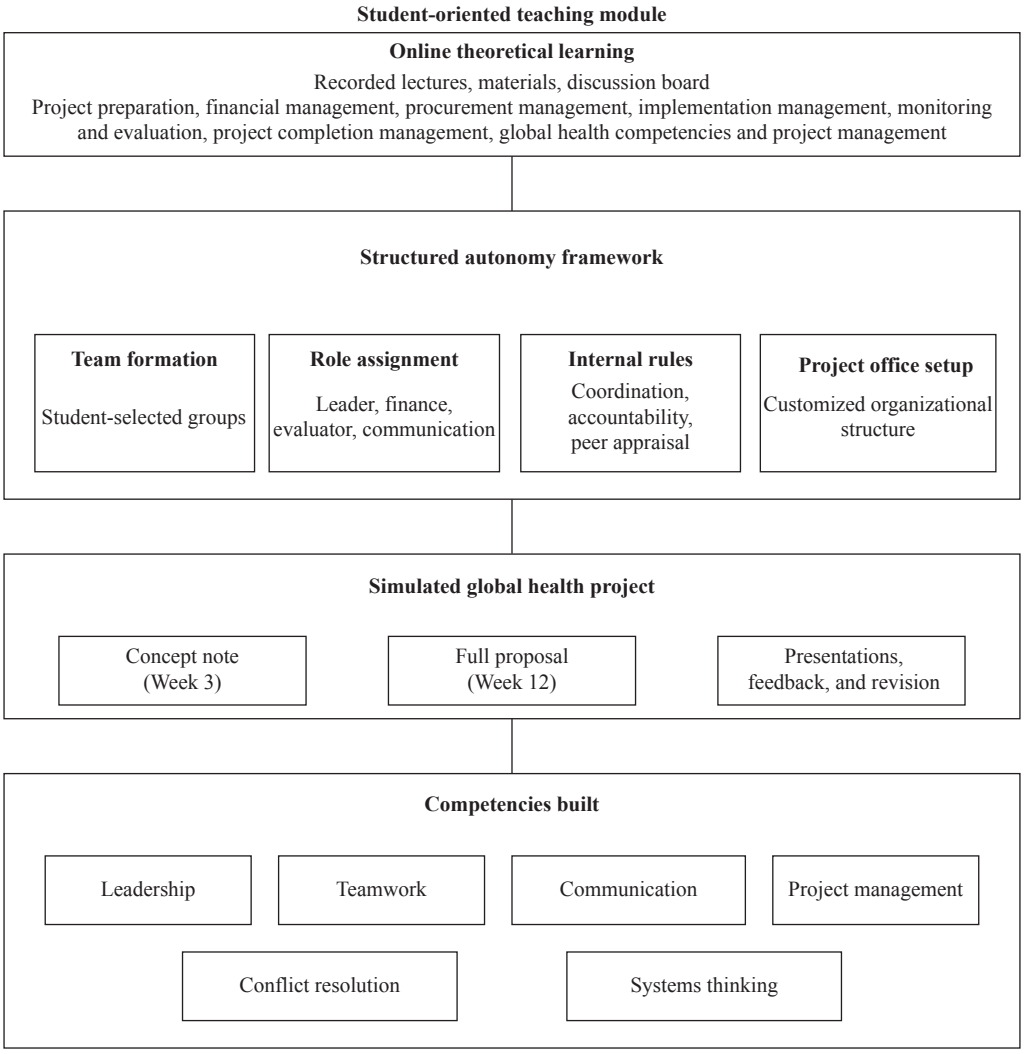

FIGURE 1. Conceptual structure of the teaching module.

future iterations of the course will invite global health practitioners with experience in African and Southeast Asian contexts to provide targeted guidance to each group.

The 2025 cohort also moved beyond disease-focused topics to adopt more strategic approaches, including health-system strengthening and policy planning. For instance, Group B designed a national surveillance strategy focusing on antimicrobial resistance and developed a surveillance system for antimicrobial-resistance monitoring, whereas Group A integrated social-media tools into an HIV-prevention intervention for resource-limited urban communities in India.

Some students demonstrated strong interdisciplinary thinking. For example, Group A combined public health knowledge with communication strategies to design an HIV-prevention project in India, proposing media campaigns and narrative-based tools to reach target populations.

Greater Autonomy and Teaching Assistance Guidance: Promoting Equity and Reducing Conflicts

Several challenges observed in the earlier iterations of the teamwork module, such as uneven participation and excessive competition, were addressed by the 2025 cohort (Table 2). To promote a more balanced engagement, each group developed internal regulations and clearly defined job descriptions. A new *coordinator* role was introduced to facilitate communication and coordination within teams. Smaller group sizes and increased role clarity also strengthened accountability. Teaching assistants actively monitored group discussions to encourage equitable participation. Taken together, these improvements fostered a more

TABLE 1. Students' project presentation topics (2024 *vs*. 2025).

Year	Group (No. of students)	Project topic		
		Health issue	Health intervention	Field site
2025	A (5)	HIV mother-to-child transmission	Integration of social media and traditional healthcare activities	India (Dharavi, Mumbai)
	B (6)	Health strategy development	Strategic planning (Focusing on GLASS-AMR system)	Senegal
	C (6)	Dengue fever	Prevention and competency building in primary care setting	Cambodia (Three provinces)
	D (6)	Malaria	Health system strengthening	Nigeria
2024	E (11)	Dengue fever	Aedes detection	Bali, Indonesia
	F (10)	Healthcare	Developing digital surveillance platform	Vietnam, Thailand, Cambodia
	G (10)	Dengue fever	Prevention competency building through cooperation	The Philippines
	H (9)	Competency building for health institutions	Healthcare aid	Rural areas in Laos
	I (9)	Cervical cancer	Preventive intervention	Kanali province in western Nepal

Abbreviations: HIV=Human immunodeficiency virus; GLASS-AMR=Global antimicrobial resistance and use of a surveillance system for antimicrobial resistance.

TABLE 2. Challenges and solutions of the student-oriented model.

No.	Challenges emerged in 2024	Solutions in 2025	Results observed
1	Conflicts among team members and weak leadership affected collaboration.	Redesigned the role-play module to include 1) A new "coordinator" role; 2) Developing an internal regulation in each group.	No interpersonal conflicts were reported.
2	Unequal task distribution and lack of a shared goal led to "Hitchhiking."	1) Students drafted job descriptions and responsibilities at the beginning; 2) Teaching assistant monitored group discussions; 3) Smaller groups	No complaints of "Hitchhiking" were reported.
3	Difficulties in individual assessment of students.	Supplemented group presentations with individual online learning tasks using online course in the XuetangX platform.	The platform tracked and recorded individual engagement and effort.
4	Excessive competition among students negatively impacted teamwork and peer assessment.	Teaching assistants were more actively involved as facilitators to guide group discussions and reduce competition.	Improved collaboration and more balanced participation were observed across teams.

collaborative and supportive learning environment, enabled students to build practical skills, and enhanced the overall effectiveness of the course.

Reflections on Course Implementation and Global Health Education

This student-oriented approach aligns with China's global health training needs, as many students have limited practical experience in leadership, teamwork, and conflict resolution. By assuming responsibility for team organization and internal coordination, they develop competencies that are rarely cultivated in traditional teacher-led curricula. Drawing on observations from the 2025 IHPM course, this section outlines the new challenges encountered and discusses their implications for strengthening global health education.

Deep discussions foster open-minded thinking. Compared with the traditional disease-centered perspective that dominates global health cooperation, students in the 2024/2025 cohort began examining broader strategic and systemic issues. This shift indicates that student-oriented models, particularly those emphasizing exploration, discussion, and experiential learning, may be more effective for encouraging critical, creative, and open-minded thinking. Relative to instructor-directed approaches, these models appear to better support the development of independent thinking and innovation, which are essential for addressing the evolving challenges of global health (*10*).

Empowering students to take ownership improves group dynamics. Through role-play and clearly defined responsibilities, students were encouraged to assess their strengths and understand the demands of different project roles. This structure fostered accountability and strengthened collaboration. Compared with the previous year, the 2025 cohort experienced fewer instances of group conflict and inequitable task distribution. Encouraging students to

conduct self-assessment and take responsibility for their contributions proved effective in reducing common teamwork challenges such as unequal participation and role ambiguity (*11*).

Broadening disciplinary backgrounds enhances analytical depth. Students' ability to conduct in-depth analysis was closely linked to their familiarity with the subject matter. The cohort consisted entirely of students from the School of Public Health, who demonstrated strong analytical skills when addressing traditional public health issues, such as infectious disease prevention. However, they faced challenges when working on more complex or multidisciplinary topics, such as designing the GLASS-AMR system or proposing health system–strengthening strategies, where broader disciplinary knowledge was required. This observation reveals a key implication for global health education: effective global health practitioners need interdisciplinary training and should not be trained solely within public health (*12*). Future talent development may benefit from more structured interdisciplinary preparation. Placing this module later in the curriculum, after students complete foundational courses such as international relations and health economics, may better support advanced analytical work. The updated university training plan will reflect these adjustments.

Increasing IHPM course credits supports a stronger theory-to-practice learning pathway. This year's course improvements strengthened students' competencies in leadership, cross-cultural communication, and strategic thinking. We integrated two instructional approaches: online delivery of theoretical content (including project planning, procurement, and budgeting) and in-class competency building through student-oriented teamwork and role-play. However, because in-class time was limited under the current credit structure, all theoretical instruction was moved online, while classroom sessions focused entirely on discussions and practical exercises. Consequently, students demonstrated weaker theoretical grounding, which was evident in the quality of their assignments. For instance, in procurement management, textbooks describe three standard procurement categories, yet many students were unable to clearly identify these categories or differentiate among them. In 2024, this material was taught during a 2.5-hour in-class session, whereas in 2025 it was condensed into a 45-minute self-paced online module. This reduction in guidance contributed to the weaker justification of procurement choices and less-developed monitoring and evaluation components in the students' proposals.

Although the 2025 cohort produced projects that were slightly weaker in structure and deliverables compared to the previous year, notable improvements were observed in conflict resolution, teamwork, and ethical reasoning.

Based on these findings, we propose organizing the curriculum across three semesters, each emphasizing foundational theoretical instruction, skill development, and competency building. Each semester would include approximately two credits and 16 teaching hours. This arrangement would allow students to first build a solid theoretical base and apply these concepts through structured exercises, before strengthening leadership, communication, and problem-solving capacities in real-world global health scenarios. As the University is currently revising its global health training program, the credit allocation and sequencing of this structure are under development. The results of this curriculum research will be shared in future studies.

Potential barriers to scaling the student-oriented model. Scaling student-oriented modules may face several practical challenges. Effective implementation requires faculty members with international project management experience and the ability to guide student-oriented teams, indicating the need for expanded standardized faculty training. These competency-building activities also depend on cross-departmental coordination and institutional resources that may not be available at all universities. Comprehensive universities may be better positioned to integrate campus resources, and collaboration with other domestic or international global health programs could support the establishment of shared fieldwork sites. In resource-limited settings, faculty training briefs, shared teaching materials, and low-cost online platforms may improve feasibility.

This study also had several limitations. Competency development was assessed primarily through the pre–post comparisons of student assignments and instructors' observations, reflections, and discussions across the two years of implementation, rather than through validated quantitative instruments. Although the comparative table shows reductions in interpersonal conflicts and "hitchhiking" behaviors in 2025, these indicators remain observational and may not fully capture changes in leadership, teamwork, or project-management skills. Furthermore, the absence of validated tools for quantitatively assessing

competencies essential for global health practitioners, such as leadership, communication, and strategic thinking, limits our ability to generate systematic evidence. Developing assessment instruments aligned with China's global health strategies and suitable for evaluating practitioners' readiness for international cooperation remains an important direction for future research. We also plan to conduct short-term follow-up and long-term tracking 1–2 years after course completion and subsequently after graduation and employment. External funding will be sought to support follow-up for the 2024, 2025, and future cohorts.

Global health has evolved considerably in recent years, shifting from a disease-focused, project-driven approach concentrated in low- and middle-income countries toward one emphasizing equity, cooperation, and diverse contributions from both the Global South and North (*13*). Different participants contribute in distinct ways, whether through financing and systems support or through local innovation and adaptability (*14*). In response to this shift, our student-oriented education model emphasizes empowering each student to contribute meaningfully to their team, fostering shared responsibility and purpose. In an era defined by uncertainty and complexity, competency building for global health professionals requires not only interdisciplinary knowledge but also strong leadership, cross-cultural communication, strategic thinking, and the ability to collaborate across diverse contexts. The student-centered design and findings from our competency-building module may offer timely insights for China's ongoing strategic health-workforce development initiative (*15*). Developing these competencies is essential to preparing future professionals to contribute meaningfully to a shared global health future.

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