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The Co-Design of a Locally Led Health Professional Education Curriculum in Lao People's Democratic Republic

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Abstract: (1) Background: There is a need to scale and transform health professional education (HPE) globally to not only improve the quantity but also the quality of health workers. This paper describes the approach undertaken by a Health University in Lao PDR. (2) Approach: The HPE curriculum was designed in an iterative process with key stakeholders from both the institution and government, with external expert advice. (3) Outcomes: The curriculum was successfully developed consisting of nine core modules and one elective module, reflecting both elements seen globally in HPE curricula as well as reflecting local needs. The content and teaching methods were validated and reviewed through piloting with local education leaders. (4) Conclusions: Despite the need to scale HPE globally, there are few examples of how this can be achieved in countries in which large gaps exist in HPE capacity. This paper provides one such example, through recognizing that sustained external partnerships will still be needed for successful future implementation.

Keywords: health professional education; LMIC; implementation

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1. Background

In 2010, the Lancet Commission on Education of Health Professionals for the 21st Century highlighted the need for harnessing global resources which are adapted locally, enabling interprofessional education and leveraging technology for learning to meet the needs of the health workforce, and therefore population health needs [1]. In response to these recommendations, 2013 World Health Organisation (WHO) guidelines called for the transformation and scaling up of health professionals' education to not only close the gap in the available health workforce but to "increase the quantity, quality and relevance of health professionals, and in so doing strengthen the country health systems and improve population health outcomes" [2]. The vision called for greater alignment between systems for education and for health, local ownership of programs and priorities supported by partnerships, global excellence coupled with local relevance and educational institutions which have dynamic curricula with supportive learning environments, creating motivated staff who are retained [2]. The report highlighted key policy issues for education and training institutions including faculty development, relevant teaching, and learning methods such as those focused on teams and interprofessional education, as well as accreditation and regulation. Since that time, the COVID-19 pandemic has amplified challenges for the health workforce, the educational needs of health professionals and the capabilities required of educators themselves to support education's responses to rapidly changing

circumstances [3]. Opportunities have arisen from these changes, which accelerated applications of technology in both health and education institutions. This lays a platform for ongoing future change that will continue at pace through other advances in areas such as artificial intelligence.

Yet many countries are at risk of being left behind [4]. Challenges such as faculty development, resources for technology for learning, infrastructure for learning delivery, and traditional views of teaching and learning approaches meant that progress was limited in some contexts. In these countries, the emergence from the pandemic has potentially meant a reversion to methods with which faculty are most comfortable, with a lost opportunity to harness the momentum for change [4]. Additionally, the global expansion of online learning still requires capability in core languages such as English, French or Spanish to access learning effectively. In the current context, there is a risk of a widening gap between those education institutions in different contexts who have been able to embrace recent evolutions in health professional education and those who have not.

Lao People's Democratic Republic (Lao PDR or Laos) is a landlocked country in Southeast Asia with a population of around 7.5 million. The progress that Laos has made from medical training programs dependent on external organizations or other countries to a locally based system has previously been described [5]. Yet the progress in health professional education capacity building has not been the same. Medical resources in the Lao language remain limited and teacher numbers and capability remain below what is needed, along with the quality of teaching and learning [5]. Faculty in the University of Health Sciences (UHS, the sole University in the country, overseeing a wide range of health professional education) had previously received training in Pedagogy from the Lao National University (over 120 h). Yet development of specific health professional education has largely been dependent on external parties, from international partners, often delivering short-term trainings. While these trainings are an important component of building local capability, they run the risk of being driven by the current approaches to education in other countries, rather than local contextual needs. Furthermore, because they are delivered by international experts when local capacity is lacking, they are likely to be taken as the "right approach" from a respected authority, even when they are not. For example, problem-based learning (PBL), a pedagogical approach widely adopted in undergraduate and post-graduate courses [6], was previously promoted in Laos through such training approaches. It was subsequently incorporated into curricula, yet its implementation failed, largely due to high student–teacher ratios, which meant that implementation was never going to be practical. Current attempts to promote competency-based education approaches run the same risk, without a system that can adequately support faculty in its practical implementation [7].

One solution to these challenges is to focus instead on building broader local capacity in health professional education, which can then empower local educators to determine the teaching and learning approaches which are effective and feasible in their own context. This paper describes the development of a locally driven health professional education course at the University of Health Sciences in Lao PDR, the sole University in the country, responsible for teaching a range of health professionals from six faculties (medicine, dentistry, nursing, pharmacy, medical technology, and public health). The aim was to contribute to improving the quality of care through improving and sustaining the quality of health professional education.

2. Approach

A staged approach to curriculum design aligning with Design-Based Research Principles [8] was undertaken based on several key principles. Firstly, the curriculum had to be suitable for the future both from the perspective of teacher capabilities and the future-ready learners they develop [9]. This included both technical competencies (e.g., in technology for learning despite ongoing barriers to its availability) and professional competencies (e.g., ethics, communication, professional and interprofessional learning). Secondly, it needed

to meet local needs, which may differ from content traditionally thought about in health professional education curriculum. Finally, its development would be iterative, to ensure it was meeting local needs, was feasible in the local context and enabled local educators [10].

The following stages were undertaken:

1. A core team was established including local clinical, education and research experts working with an international colleague.
2. The team reviewed the current curriculum of pedagogy in the Lao National University (not health professional-specific), international examples of health professional education curricula, and the perceived local needs. A proposed curriculum outline was developed in an iterative process to ensure mutual understanding of the proposed content areas and to identify curriculum gaps according to local needs.
3. The initial curriculum structure, outline, and content were presented to the broader leadership of the University including representations from each faculty as well as from the Ministry of Health (MoH) and Ministry of Education (MoE) for discussion and consensus. The outcome of this process was a complete draft curriculum which outlined the content that needed to be built for delivery with an agreement to pilot test material with the intended audience.
4. Building and piloting [11] of teaching and learning materials for acceptability, feasibility, and refinement. Two pilot workshops of 5 days each were held 4 months apart with short surveys including mixed short, open-ended responses and Likert responses ranking agreement (from strongly disagree to strongly agree) with statements as to the educational value, interactivity of teaching and learning methods, perceived impact on practice, and future ability to teach the course (Appendix A). These were completed anonymously at the end a day of training (for 4 out of 5 of the days in each workshop) in order to obtain targeted feedback on content rather than overall satisfaction with the course. In addition, observational data in the form of field notes during training provided information on how content was received, understood, or applied.
5. Finalization of the curriculum through further consensus meetings with key stakeholders outlined above for endorsement by the relevant government authorities.
6. Preparation of future facilitators through workshopping course materials over 5 days.

Data analysis was aimed at course refinement and improvement. Short survey responses consisted of Likert scales and brief open-ended answers. Likert scales were analyzed according to the percentage of responses in each category. Open-ended survey responses were analyzed deductively along with field notes to identify (a) key learnings and motivation to apply to practice, (b) areas for improvement in terms of content or methods, and (c) preparedness to facilitate in the future.

Participants for the pilot workshops included 40 staff from six faculties of the University of Health Sciences who were selected on one of two criteria: (a) seniority, to ensure key opinion leaders were included and engaged in the curriculum development, to provide the necessary authority for is implementation and (b) perceived engagement and capability as a clinical educator to enable future faculty development.

3. Outcomes

The final curriculum consisted of nine core modules covering key topics in health professional education from a local perspective, which are outlined in Table 1. In addition, participants would need to complete one of five elective modules in the form of an education project in the areas of simulation, interprofessional learning, technology for learning, education leadership, or an education research or development project.

Table 1. Health professional education course outline.

Week	Subject	Hours
1	Principles of how we learn Facilitating large and small group learning	15 15
2	Work-based learning Assessing learners	15 15
3	Designing and delivering education online Curriculum development and evaluation	15 15
4	Teaching communication skills Teaching professionalism Teaching and learning in research	10 10 10
onwards	Elective: - Education research or development project - Simulation - Technology for learning - Interprofessional Learning - Leadership	30

It was agreed that the core curriculum would be delivered over a continuous 4-week block, followed by flexible time for the completion of the elective module. This was the preferred mode after multiple consultations, despite recognition that evidence would support more spaced-out education—with course delivery separated by periods to allow reflection and application in practice [11]. The primary reason for the block delivery was for the practicality of removing staff from their workplace for a limited and focused time to avoid distractions and allow completion of tasks.

The pilot course materials were delivered to 40 staff from the six faculties of the University in addition to representatives from the MoH and MoE. All had previously received health professional education training through workshops delivered locally by local experts and international partners. Analysis of quantitative data collected at the end of each day demonstrated strong validation of the teaching and learning approach and content. (Figure 1). Over the duration of both courses, 250 responses were collected across 8 days, providing an average response rate of 31 (or 78% of participants). The course was perceived as valuable and engaging and participants felt it would change educational practice. Participants felt less certain regarding their ability to teach the content in the future.

In the qualitative data, participants reflected that they had previously been taught some of the content theoretically but highlighted that the teaching and learning approach used in this course enabled them to understand better through application and practice. They expressed motivation to apply learnings to change practices to simplify teaching messages, increase experiential and interactive learning, and take learnings back to their colleagues. Specifically, they had more understanding of the range of teaching methods they could choose from, the principles and theories that underpin teaching and learning, the need to focus on student-centered approaches, shifting from presenting to facilitating in content delivery, and how they could start to use simple technology for learning in their classes.

In the qualitative responses from the second pilot workshop, many gave specific examples of changes they had already made. These included redesigning newborn resuscitation training for medical students in their pediatric curriculum, adopting audience response systems for large-scale lectures, and exploring existing teaching sessions to convert to Team-Based Learning.

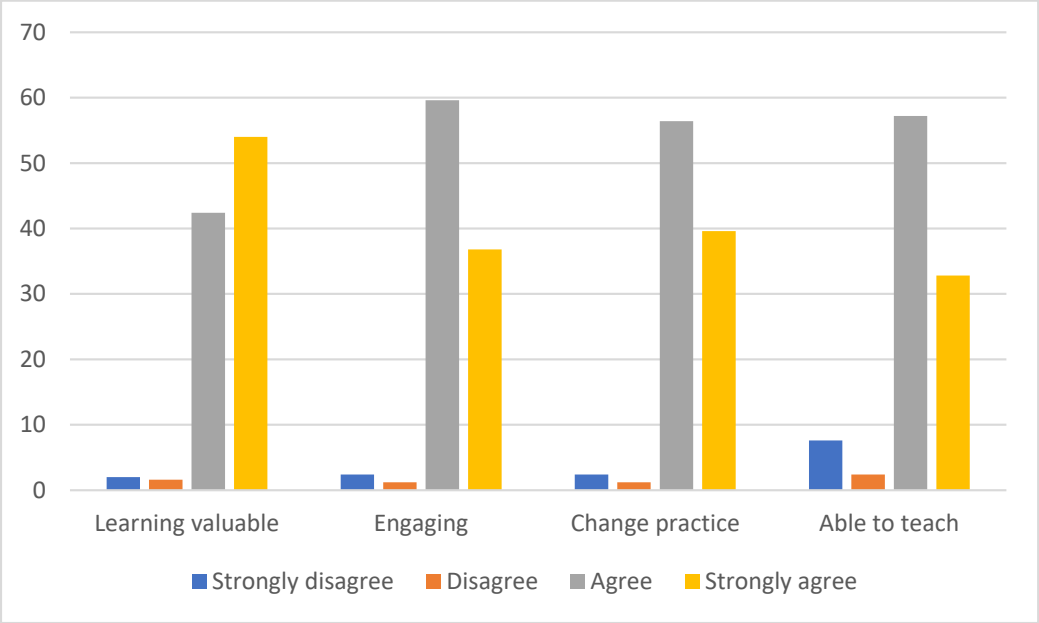

Figure 1. Responses on a 4-point Likert scale to surveys of piloted content including (a) its educational value, (b) engagement and interactivity, (c) whether it will change their practice, and (d) whether they feel able to teach the content. The numbers on the *y*-axis represent the percentage of responses in each category.

In terms of areas to improve content or teaching methods, the qualitative data demonstrated that pilot workshops enabled the identification of concepts which required simplification in content or language, areas which required more time for practice or application, identification of audiovisual content needs to support teaching and learning, and discussion over the assessment format that should be utilized. It ensured the relevance of topics such as teaching and learning in research, that professionalism and communication were validated with the intended audience, and that their content was appropriate for the local culture. The content itself allowed participants to identify gaps in their own curriculum such as communication skills and professionalism, which were mostly implicit. For example, in the module on teaching professionalism, participants were all able to identify what professionalism meant to their craft group and what they expected students to understand and agreed on the importance of professionalism. But no faculty explicitly taught professionalism to their students in any way.

Despite the investment in preparing future potential supervisors to deliver the curriculum throughout this curriculum development process, the qualitative data suggested few felt prepared to facilitate a course module independently at the completion of this process. This reflected both the relatively new nature of much of the content, alongside the new approach to content delivery which would require practice and reinforcement. Many participants did not yet see themselves as experts in this field. This was evidenced in field observations of practical sessions which required participants to facilitate or lead a session. Despite openness to trying new ways of teaching and learning, there was often reversion to comfort zones of presenting in a didactic fashion.

4. Discussion

Calls to scale up the quantity, quality, and relevance of health professionals for their local context [2] require a similar investment in local health professional education, yet there are few examples of how this can be achieved. The development of a forward-looking, locally driven course to build capability in health professional education in a Lao Health University provides an example of how this can be conducted through stakeholder and end user engagement. Evidence from other studies has demonstrated a significant relationship

between teachers' involvement in curriculum piloting and subsequent implementation of the curriculum in context [10]. The changes in practice reported by workshop participants between pilot workshops in this curriculum project provide evidence of the degree of engagement with this work and the impact. Furthermore, the fact that participants applied learnings in different areas of their own teaching and curriculum highlights a strength in broad capability building, which allows individuals to meet their own gaps and needs, rather than focusing on a specific pedagogy.

The process validated locally led decisions on modules which may not traditionally be a part of the health professional education curriculum (e.g., teaching and learning in research, teaching professionalism), yet this content represents the reality of the capability which needs to be built on the ground. The process also led to decisions made for practicalities (e.g., a 4-week block delivery) rather than an alternate model informed by what evidence may suggest is best practice (spaced education delivery) [11]. The latter was determined to be unfeasible at this time. However, the modular format of the curriculum design allows for flexibility in delivery and capacity to change this timing in the future.

A recent study explored the impact of an international faculty development program for medical educators, a decade after its delivery in Vietnam [12]. The study highlighted that the momentum of change from the program faltered and was not sustained due to contextual factors such as educators being unseen or unrecognized, resources and structures in institutions not supporting them, and the influence of hierarchy.

Similarly, a scoping review of the implementation of problem-based learning in non-Western countries highlighted the challenges with its use in this context both due to student perceptions of its effectiveness and the availability of teachers or resources to deliver it [13]. Yet when education initiatives are led by external partners, it is often their perspective of the right model for education which is presented, and these models gain traction for these reasons rather than being the right approach in any one context. In short, bias from the Global North is evident [14].

By locally building the comprehensive health professional education curriculum described in this paper, engaging key leaders in the institution and government in its development and the potential facilitators in its pilot, the hope is that pitfalls such as those described above may be avoided. This is perhaps in contrast to many activities whereby capacity gaps in health professional education are addressed by short-term trainings on selected topics or by individuals undertaking courses outside their own country. The flaw in the former approach is that stakeholders cannot necessarily see solutions if they are not provided with a range of content as a starting point. The flaw in the latter is the lack of a cohort who can work together and be supported to build a foundation for local expertise, as demonstrated in the above example from Vietnam [12]. While the approach described is an important starting point for Laos, other countries will benefit from partners not just sharing curricula but using this as a starting point for adaptation and co-design for local needs.

The lack of confidence among current participants to be future facilitators who are education leaders at their own University reflects a need for ongoing support to enable sustainable implementation. This can be achieved by supportive co-facilitation with external partner universities, including building on existing relationships, who have already expressed willingness to help and build a Community of Practice around them to enable local faculty growth. It remains to implement this curriculum and understand its impact. This will require continual evaluation which will be part of ongoing work, including establishing metrics for understanding the quality and impact of content delivery and successful faculty development. Potentially the greatest measure of success will come when local facilitators take ownership of the curriculum and demonstrate they can grow and shape it in the future to meet the needs of local health professionals and patients in the health system in which they work.

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Data Availability Statement: The primary author (AG) can be contacted for access to data supporting the results.

Conflicts of Interest: The authors declare no conflicts of interest.

Appendix A

1. What day of the course have you just completed?
    - Day 1;
    - Day 2;
    - Day 3;
    - Day 4.
2. What is your Faculty?
    - Medicine;
    - Nursing;
    - Dental;
    - Medical Technology;
    - Public Health;
    - Pharmacy;
    - Other.

    Please rate your agreement with the following statements (strongly disagree, disagree, agree, strongly agree):
3. The module was valuable for my learning.
4. The module was engaging and interactive.
5. This module will change how I deliver education.
6. I think I could teach this module in the future
7. Please list the most important things you learned from the module. . .
8. Please tell us what you would change. . .

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