

Case study

Bridging the gap between acupuncture training and clinical practice: A case analysis of group project in a Meridian & Acupoint class in Korea

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Background: Sufficient training and clinical experience are required in acupuncture training curricula to ensure competency. However, the practice of medical students is limited and only allowed under certain conditions in Korea. This study aims to present a group project that provides additional acupuncture treatment experience in Meridian and Acupoint classes to bridge the gap between acupuncture training and clinical practice.

Methods: We described and analyzed a group project implemented at a single college of Korean medicine since September 2022. An instructional designer, who is also a specialist in acupuncture and moxibustion medicine, designed the group project through discussion with a subject matter expert, the instructor of this class. As comments and complaints revealed this project was modified and redesigned for a new curriculum in 2023.

Results: Assignments included pre-learning content, medical records, treatment notes, analysis of patient progress, and reflections on learning. Assessment based on a predefined rubric replaced the midterm examination and counted toward the students' grades. Grading and feedback were done using Google Classroom. However, several complaints emerged: lack of motivation to learn, high learning burden, and inappropriate when they had not yet learned clinical subjects. The project model was redesigned to reflect their practice in class for the first semester, identify target anatomical structures in the needle tip for the second semester, and experience acupuncture treatment with less burden for the third semester.

Discussion and conclusion: The experience of selecting and treating patients from their peers may be an alternative to the current clinical clerkship. Further studies on novel programs for early clinical practice and their effectiveness in Korean medicine education are needed.

Keywords: Acupuncture, Education, Early clinical experience, Real patient

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Introduction

As the popularity and impact of acupuncture grow worldwide, the scope of acupuncture education and

licensing system is expanding¹⁻³. To ensure competency, sufficient acupuncture training and clinical practice are included in overseas acupuncture education^{3,4}. The experiences of students practicing acupuncture while encountering real patients and solving their problems may



bridge the gap between theory and practice. However, in South Korea, where acupuncture has traditionally been used and doctors of Korean medicine (KM) are nationally qualified, future healthcare professionals practicing on patients are restricted, with some exceptions, before graduation.⁵

In South Korea, graduates of 6-year bachelor's, 7-year bachelor's and master's, and 4-year master's courses in Korean medicine (KM) colleges become doctors of KM after passing the national licensing examination. In Korean medicine colleges, theory and simple skill training of acupuncture are covered in the Meridian and Acupoint class, which comprises 2–4 semesters, with each semester lasting for 10–20 hours⁶. The Meridian and Acupoint course is closely related to the Acupuncture and moxibustion medicine, one of the eight clinical departments in KM. In general, locations, anatomy, and indications of individual acupoints are covered in the Meridian and Acupoint class and practiced in the Meridian and Acupoint practice class. Afterward, the combination of acupoints for various diseases is covered in the Acupuncture and moxibustion medicine class. However, as the Acupuncture and moxibustion medicine practice is implemented in departments in KM hospitals during clinical clerkship, the practice is usually focused on diagnosing and treating patients with musculoskeletal or neurological diseases, rather than selecting acupoints for diverse patient conditions, as described in the textbook⁷. Therefore, novice doctors of KM may find it difficult to determine a set of acupoints to treat their patients.

Since 2022, the authors have applied an instructional design model to make gradual but significant changes to the Meridian and Acupoint practice class. We created a teaching and learning manual for competency-based education by analyzing needs and tasks, designing prototypes, developing materials and manuals for both students and teachers, implementing the prototype, and evaluating the effects^{7,8}. During the needs analysis stage, we found that, although students need to master the procedural skills of acupuncture, it is also essential to learn how to select the acupoints according to the patient's condition and treat using acupuncture in clinical practice. However, existing Meridian and Acupoint practice course is already intensive for identifying and practicing acupuncture at over 300 acupuncture points. In this context, we created a group project to provide students with the opportunity to practice acupuncture in real-life conditions outside of class. Here, we present the details of the tasks assigned to students and the changes in assignments after receiving student feedback on the project. This study aims

to serve as a reference for designing vertically integrated courses in the KM curriculum, and ultimately, bridge the gap between theory and practice in competency-based KM education.

Case analysis of the group project

1. Design

The group project was designed by an instructional designer, a specialist in Acupuncture and moxibustion medicine, who was aware of the objectives, content, and teaching strategies of the Meridian and Acupoint practice course through an instructional systems design. This group project was aimed at students in the second semester of their first year to the first semester of their second year in the College of KM who are taking the Meridian and Acupoint practice classes. These students have completed anatomy and anatomy dissection, are taking Meridian and Acupoint theory class with practice class, and have not yet studied KM diagnostics and clinical courses. The draft of the group project design was then discussed with a subject matter expert (the instructor) to draw a final form. We referred to an extracurricular student patient care program that the university had been running⁹. The project aimed to provide students with sufficient opportunities to practice acupuncture in the practice room, outside of regular class time, and to experience real problem-solving. Each group was assigned to select one patient from each group and acupoints to treat their symptoms or diseases.

Details of the group assignments are presented in Supplementary 1. Most importantly, the entire process was performed with the patient's consent. As the students in this course had yet to learn about diagnostics and clinical KM, they were asked to recruit a senior student to lead the patient encounter. Students were asked to adequately learn about the patients' symptoms or related conditions to begin their care. Students were instructed to make a comprehensive diagnosis by reviewing the patient's medical history, examining the patient's chief symptoms, and selecting the appropriate acupoints for treatment. Treatment progress was evaluated based on both subjective and objective outcomes before and after treatment. The students were asked to submit video recordings of each acupuncture session. The treatment was recorded on a pre-developed practice note form. The assignments were submitted online using Google Classroom.

2. Implementation

Beginning in the second semester of 2022, students worked in groups of four to six to complete the project.

Table 1. Rubrics for the group project evaluation

First year	Second year
Contribution and roles of each team member <ul style="list-style-type: none"> • Excellent (10) • Good (8) • Moderate (6) • Unsatisfactory (3) • Poor (0) 	Contribution and roles of each team member <ul style="list-style-type: none"> • Excellent (10) • Good (8) • Moderate (6) • Unsatisfactory (3) • Poor (0)
The amount and quality of the project output <ul style="list-style-type: none"> • Excellent (10) • Good (8) • Moderate (6) • Unsatisfactory (3) • Poor (0) 	Adequacy of performance <ul style="list-style-type: none"> • Excellent (15) • Good (12) • Moderate (7) • Unsatisfactory (5) • Poor (0)
Accuracy and creativity of the project output <ul style="list-style-type: none"> • Excellent (15) • Good (12) • Moderate (7) • Unsatisfactory (5) • Poor (0) 	Fidelity of learning <ul style="list-style-type: none"> • Excellent (10) • Good (8) • Moderate (6) • Unsatisfactory (3) • Poor (0)
Consistency and uniformity of the project output <ul style="list-style-type: none"> • Excellent (15) • Good (12) • Moderate (7) • Unsatisfactory (5) • Poor (0) 	Adequacy of medical records <ul style="list-style-type: none"> • Excellent (15) • Good (12) • Moderate (7) • Unsatisfactory (5) • Poor (0)

Students were required to submit their work mid-semester, which included at least one video of the acupuncture treatment session. The instruction designer for this group project checked the mid-term results and provided feedback on future patient care. Final assignments were submitted at the end of the semester. The assignments included pre-learning content, medical records, treatment notes, an analysis of the patient's progress, and reflections on their learning. These assignments can be regarded as portfolio. Scores based on a predefined rubric replaced the midterm examination and counted toward students' grades. The scoring and feedback were conducted using Google Classroom.

Before the second semester of 2023, the instruction designer created a detailed guide for the group project after realizing that some students had poor understanding and a specific explanation was required. The guidelines included objectives, step-by-step methods, examples of medical records to use, how to submit the results, and revised scoring rubrics (Table 1). As the rubric in the first year was somewhat uncertain, the assignments of the project to be evaluated were set first, and the scoring rubric was modified. "Contribution and roles of each team member" was assessed by the contribution scores recorded by students. "Adequacy of performance" was assessed by the

video of each treatment session. "Fidelity of learning" was assessed by the pre-learning records and contents. "Adequacy of medical records" was assessed referring to the medical records students charted.

3. Revisions based on student feedback

The course evaluations for each semester were considered to identify potential side effects and to revise the group project. Complaints from some students were prominent in course evaluations for the second semester of 2023. The reasons for dissatisfaction were not motivated to learn the clinical practice guidelines suggested by the supervisor, a high burden of learning, and inappropriateness when they had not yet learned the clinical subjects. The changes we made to the group project based on student feedback are as follows: 1) individual treatment session videos are not required, instead, videos presenting the results in 15 minutes were required; 2) charting treatment in the medical record forms, instead of practice notes to lessen the load; 3) the minimum number of treatment sessions was set as four; and 4) removal of the requirement that treatment progress be measured with objective outcome measures.

Furthermore, the instruction designer and instructor in this class redesigned the group projects that will be used in the second semester of 2024, with curriculum changes. The

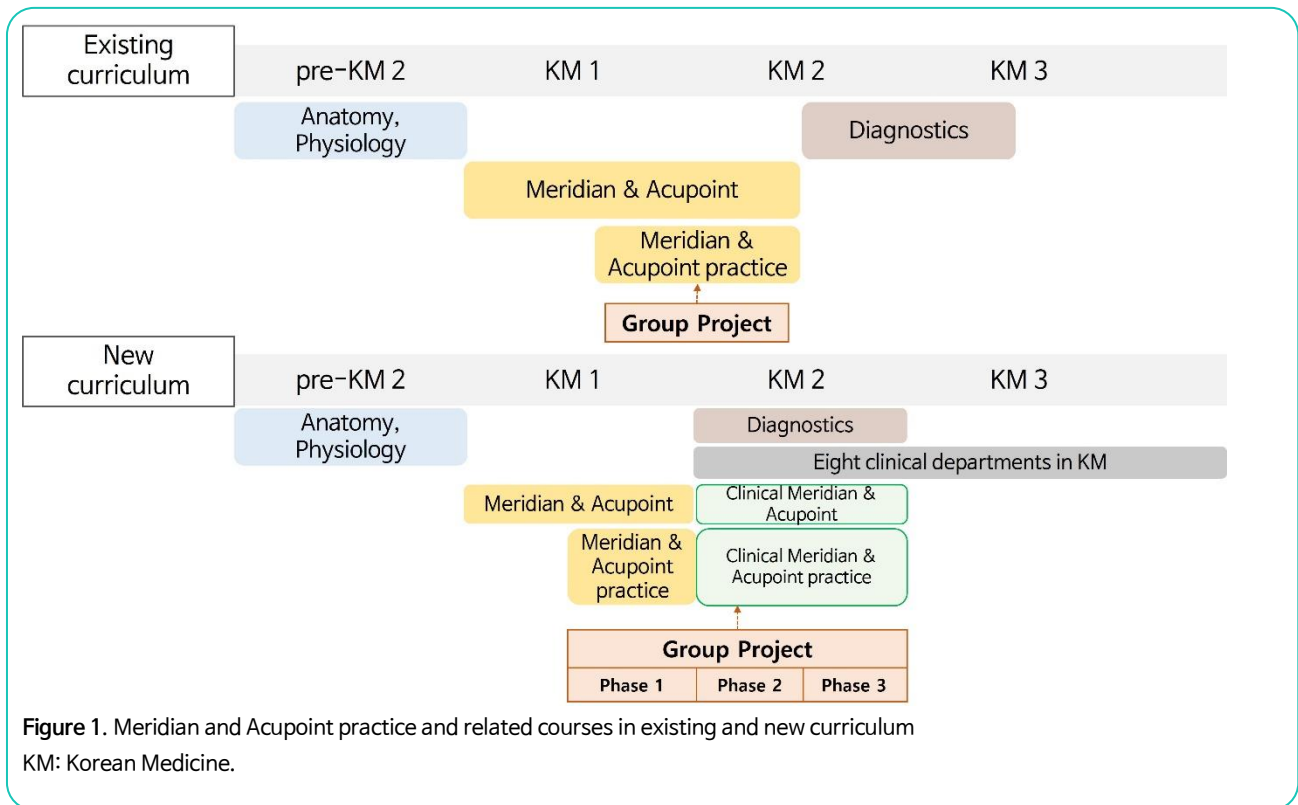


Figure 1. Meridian and Acupoint practice and related courses in existing and new curriculum
KM: Korean Medicine.

new curriculum includes three segments of Meridian and Acupoint practice classes, considering the relationship and vertical integration with the Acupuncture and moxibustion medicine (Figure 1). Therefore, we redesigned the group projects to include three, reflecting the objectives emphasized by the instructor in this course (Table 2). In the first semester, students will be asked to reflect on their performance in hygiene management, safety management, communication, guiding patients to proper positions, and addressing adverse events during acupuncture procedures, such as pain or bleeding. A detailed description of how they attempted to improve the situation is required. In the second semester, students will acquire ultrasound images to identify and describe the target structures at certain acupoints. This practice will enable students to consider acupuncture points in three dimensions and the structures stimulated by the needle tip. The clinical practice experience with student patients will be implemented in the third semester. As students have already learned diagnostics and many clinical subjects concurrently in the new curriculum, the difficulty and burden will be reduced compared with the current situation.

Discussion and Conclusion

The transition from classroom to workplace has emerged as an important concern for educators and trainers¹⁰.

Acupuncture training also requires strategies that bridge the gap between theory and practice. This study presented the design, implementation, and revision of a group project that required students practicing acupuncture to solve problems faced by their peers who have real clinical problems. In South Korea, where patient care by undergraduate students is limited, the experience of selecting patients from among peers and treating them can be an alternative to the current clinical clerkship.

In medical education, early patient encounters and clinical experiences have been introduced into the regular curriculum¹¹⁻¹³. The positive impacts of early clinical experience include improved understanding of patients, professionalism, other occupations in hospitals, hospital systems, and motivation to learn¹⁴. Moreover, it helps students acquire a wide range of knowledge, skills, and attitudes with effects on career choice, confidence, motivation, and even benefits other stakeholders such as teachers and patients¹⁵. However, to our knowledge, no such cases have been reported in KM colleges, and even if lower-grade students occasionally visit KM institutions as a learning experience, it is rather temporary, and specific purposes and tasks are not assigned. A structured and well-designed early clinical practice program is required in KM education to develop students' professionalism in their clinical ways of thinking¹⁵.

Table 2. Redesigned group project assignments for the new curriculum

	First Semester (Phase 1)	Second Semester (Phase 2)	Third Semester (Phase 3)
Objectives	Perform acupuncture procedures hygienically and safely	Specify and identify anatomical structures to be stimulated with acupuncture	Properly document the procedure after examining and treating a patient
Assignment formats	Portfolio and video presentation (15 min)	Portfolio and video presentation (15 min)	Portfolio and video presentation (15 min)
Assignments	For each of the five items provided below, reflect on what did not work well in the class over the course of the semester, improvements implemented, and what needs to be done in the future 1) Hygiene management 2) Safety management 3) Communication 4) Guiding proper position 5) Addressing adverse events experienced during acupuncture	Acquire ultrasound images of some acupuncture points, mark the anatomical structures shown in the image, and suggest target structures at each point	Same as the previous group project (Supplementary 2)

Min: minutes.

The design of this group project has both similarities and differences from existing training programs. First, it is similar to a real patient care program⁹ reported by the author, however, students can make decisions together in this group project with sufficient time to search for and discuss optimal treatment points. This experience of group discussions about treatment will enable students to prepare for individual decision-making as they move into higher grades and even after they become doctors of KM. Second, it is similar to the peer role-play¹⁶ previously reported by the author in that students can experience the entire process of patient care, from patient encounters to diagnosis and treatment planning. One difference is that students can be directly treated with acupuncture in this group project; in contrast, students cannot actually treat patients in peer role-play because the patients in peer role-play are not real patients; they are simulated patients following the scenario previously created by themselves. Treatment experience may be a valuable trial-and-error practice for students before they are licensed.

This study had some limitations. First, we did not evaluate the effectiveness of the group project. It would be desirable to assess student performance to examine whether students who participated in this project were more proficient in patient care during their senior years. Second, this assignment required considerable time and effort from the instructor to verify and provide sufficient feedback. In particular, reviewing all videos of individual treatment sessions and suggesting improvements in performance were necessary but time-consuming tasks, thus making it less feasible when implemented in other classes. Nevertheless,

undergraduate clinical practice experience with acupuncture should be encouraged to ensure student competency. This study is a relatively simple case analysis; however, individual case studies on various teaching, learning, and assessment methods are still rare and valuable in KM education. Further studies on early clinical practice in the KM curriculum are required to allow undergraduates to encounter real patients.

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Conflict Of Interest

No potential conflict of interest relevant to this article was reported.

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CRedit Statement

Conceptualization: EC; Methodology: EC and JHK; Formal analysis: EC and JHK; Investigation: EC; Resources: EC and JHK; Data curation: EC and JHK; Writing-original draft: EC; Writing-review & editing: JHK; Visualization: EC; Supervision: JHK.

Data Availability

The data presented in this study are available from the corresponding author on reasonable request.

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