

# Develop and Validate Objective Structured Teaching Exercise Tool for Nursing Faculty

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## Abstract

**Introduction:** The vital role that nurses and midwives play in health care highlights the need for highly qualified nursing faculty to improve the quality of education. In order to evaluate and enhance nursing faculty members' teaching abilities, the study set out to create and validate an objective structured teaching exercise (OSTE) tool.

**Materials and Methods:** Using an exploratory sequential design, a mixed-method approach was used. Eleven Delphi experts, thirty nursing teachers, and fifty nursing students took part. The College Teaching Self-Efficacy Scale and open-ended questionnaires that gathered opinions from both faculty and students were used to evaluate the teaching competencies of the teachers.

**Results:** Three OSTE measures were created after content analysis revealed important competencies that needed improvement: Group discussion skills (20 items), oral feedback skills (10 items), and bedside teaching skills (16 items). Content validation through the Delphi technique resulted in high validity indices (I-CVI: 0.91–0.95, S-CVI/Ave: 0.91–1.00). The findings of the study indicated that faculty members identified gaps in their interactive teaching, questioning techniques, problem-based learning approaches, assessment methods, and clinical instruction skills. OSTE was acknowledged as an effective method for evaluating and improving faculty teaching abilities through structured, reproducible assessments and feedback mechanisms.

**Conclusion:** The study advocates for the incorporation of OSTE into faculty development initiatives to objectively evaluate teaching effectiveness. Additional research is suggested to refine OSTE design for wider utilization in nursing education. Utilizing OSTE as a tool for faculty assessment can help steer focused faculty development initiatives, ultimately enhancing nursing education and the quality of health care.

**Key words:** Competency, nurses, OSTE, skills, teaching

## INTRODUCTION

Nurses play a crucial role in health care and are often the first responders people see, and the quality of the initial assessment is vital for further plan of care. The Strategic Directions

for Nursing and Midwifery 2021–2025 focuses on policies related to four areas: Education, jobs, leadership, and strategic delivery.<sup>[1]</sup> In the light of global shortage of nurses, there is a need to upscale the production of quality nurses. Educational institutions need to improve the quality by updating the curricula and the competencies of the existing faculty who train future nurses. Transformative scaling of health professionals' education will strengthen healthcare system.<sup>[2]</sup>

The education of nurses in the current scenario is constantly evolving. Appropriate preparation of nursing faculty is crucial to the development of knowledge, attitude, and skills of nurses. A competent nursing faculty must possess adequate knowledge, attitude, and skills to adopt innovative methods in implementing nursing education programs.<sup>[3]</sup> The link between

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education and health system is close. The selection and training of qualified trainers/faculty is an important part in scaling up the transformation of health professionals. Recruited faculty should have adequate clinical competencies but very little pedagogical preparation. Faculty assessment is important to ensure that they are equipped to assume their responsibilities as educators.<sup>[4]</sup> Academic nurse educators should have multiple competencies such as academic, research, nursing practice, pedagogical, and communication.<sup>[5]</sup>

Nurse educators play an essential role in transforming the future of the nursing profession by preparing the next-generation professionals. According to the National League for Nursing, the core competencies of academic nursing faculty facilitate learning, learner development, and use of assessment and evaluation strategies; design curriculum and evaluation program; and act as a change agent and leader.<sup>[5]</sup> The individual competencies of nurse educators will depend on the stage of their professional career as educators. Hence, support systems in the form of mentoring and faculty development programs are essential to cultivate professional teaching competencies.<sup>[6]</sup>

It is essential to assess and conduct training programs for faculty with clinical experience without prior pedagogical knowledge enters teaching profession.<sup>[7]</sup> The new emphasis on the competencies of health profession educators has led to the formulation and usage of objective structured teaching exercise (OSTE).<sup>[8]</sup>

The concept of evaluating the act of teaching through systematic observation of simulated activity is observed structured teaching examination/evaluation/exercise/encounter (OSTE) method. OSTEs consist of simulated scenarios of teaching environment with students. Most of the OSTEs are described as 10–15 min encounters with video-recorded sessions and then discussed in debriefing sessions. During OSTE, the faculty encounters sequential stations with different teaching situations. Standardized students are used for specific stations. Feedback is given on different aspects of teacher's performance. The materials of the OSTE stations include descriptions of the situations, training the standardized students, orienting the instructors, and having a reliable and validated instrument for rating the OSTE.<sup>[9]</sup> Studies results have quoted that OSTE played a significant role in improving overall teaching ability from 3.19 to 3.81 ( $P < 0.05$ ).<sup>[10]</sup>

The OSTE is recommended as a method of assessing the teaching competencies of health science faculty and is concluded as a promising innovation though there is moderate evidence suggesting OSTE as a reliable and valid tool for assessing teaching in medical faculty.<sup>[11]</sup>

The excellence in nursing education can be achieved by comprehensively and systematically measuring the competence of nursing faculty objectively and in a structure's way through competency-specific evaluator instruments.<sup>[12]</sup>

The study aimed to develop and validate an objective structured teaching exercise tool (OSTE) with the objectives to identify

the faculty's self-perceived college teaching self-efficacy, needs related to teaching competencies, and the perceptions of students related to faculty teaching competencies and develop and validate the content and construct of OSTE tool.

## MATERIALS AND METHODS

The study adopted a mixed-method approach with an exploratory sequential design. The samples were thirty nursing faculty, fifty nursing students, and 11 Delphi experts selected through a non-random sampling technique. Ethical approval was obtained for the project, and the project was executed after obtaining informed consent from all the participants. The setting of the study was a nursing institution attached to a teaching hospital. The need analysis was done by analyzing faculty self perception on teaching self efficacy, competency and students perception on faculty teaching competencies. After analysis of the responses of faculty needs and students' perception related to faculty teaching competencies, the content analysis was completed and themes and codes were extracted. Based on the themes and codes, three OSTE tools were developed one on each theme, and the content validation was done through the Delphi technique. The developed OSTE tools were group discussion skills, oral feedback skills, and bedside teaching skills.

## RESULTS

The participants were 20% associate professors, 37% assistant professors, 43% nursing tutors. Among them, 47% had 1–3 years of experience, 37% had more than 3–8 years of experience, and 16% had more than 8 years of experience. The participant students were majority 36% from the 4<sup>th</sup> year, 20% each in the 2<sup>nd</sup> and 3<sup>rd</sup> years, and 24% in the 1<sup>st</sup> year undergraduate nursing program.

The analysis in Figure 1 shows that the teaching self-efficacy confidence level was only 41% completely confident in lesson planning and learners' performance assessment where in Figure 2 also the self-efficacy in action is lowest in lesson planning (37%) and learners' performance assessment (33%). The perception on support by the institution was quoted in Figure 4 as complete support by 48% and enough support by 52%.

The quantitative representation of the themes in Table 1 shows that majority quoted that discussion skills, feedback skills, and bedside teaching skills are perceived to be improved by the faculty. Table 2 shows that the OSTE tools prepared were valid with I-CVI and S-CVI more than 0.75.

## DISCUSSION

In health professional education, faculties have mastery in knowledge and skill related to their subject. They are expected to play another professional role of being a facilitator to ensure that students acquire the knowledge and skill of the subject matter. Faculty development is essential to enhance

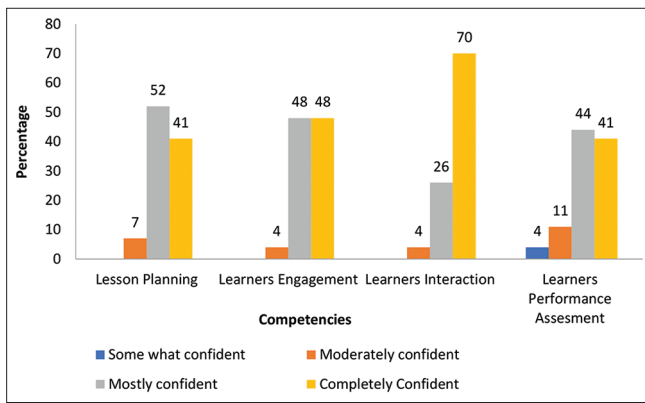


Figure 1: Faculty perceived teaching self-efficacy confidence

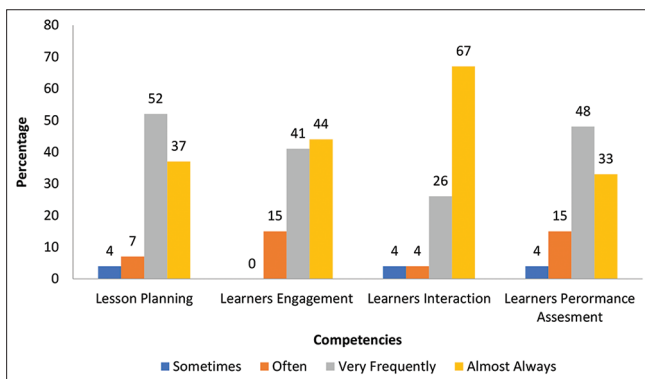


Figure 2: Faculty perceived teaching self-efficacy in action

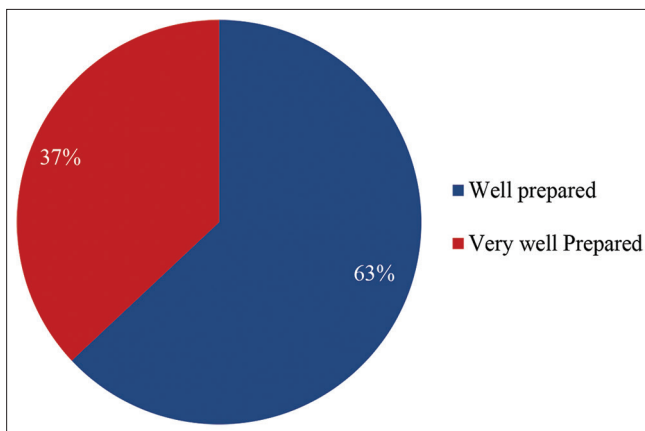


Figure 3: Faculty perception on preparation teach

teaching. To implement and evaluate outcome-based faculty development and other training programs, objective structured teaching exercise (OSTE) can be developed and used before and after faculty development programs. OSTE involves direct observation of a faculty member with a standardized teaching-learning scenario. The advantages of OSTE are it evaluates objectively the faculty skills.<sup>[13]</sup>

A review on “Medical residents – as teachers” recommended that OSTE provided their use pre- and post-intervention on outcome assessment measures. Recommended the use of

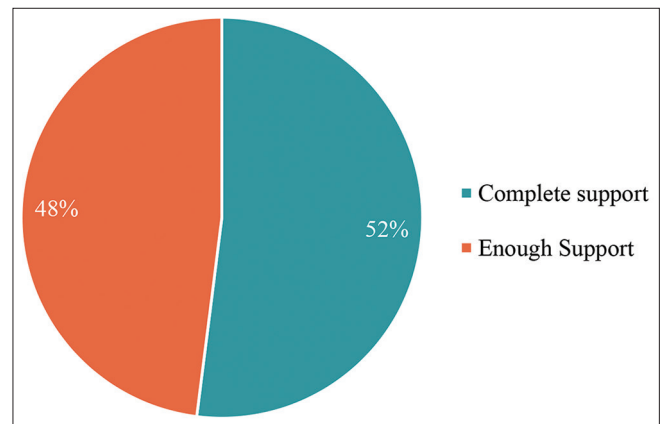


Figure 4: Faculty perception on support by institution

Table 1: Themes and codes of faculty and students' perception on teaching competencies to be improved

Themes	Codes	f	%
Classroom teaching	Group discussion skills	11	13
	Questioning skills	6	7
	Problem-based learning	3	3
	Communication skills	8	9
	Interactive teaching skills	4	5
Evaluation	Oral feedback skills	5	6
	Written feedback skills	2	2
	Grading assignments	3	3
	Question paper preparation	7	8
	Assignments/worksheets	6	7
Clinical teaching	Discussing answer paper	6	7
	Bedside teaching	10	11
	Bedside demonstration	9	10
	Bedside case discussion	7	8

Table 2: Content validity index of developed OSTE tools

Content validity	Group discussion skills OSTE tool (20 items)	Oral feedback skills OSTE tool (10 items)	Bedside teaching skills OSTE tool (16 items)
I-CVI	0.95	0.95	0.91
S-CVI/Ave	1	0.98	0.91

OSTE to enhance the effectiveness and impact of faculty development programs on clinical teaching skills.<sup>[14]</sup> OSTE is considered important for assessing the ability to teach.<sup>[13]</sup>

McSparron *et al.* concluded in the study on procedural OSTE that this can be a method to assess teaching skills.<sup>[15]</sup> Objective structured teaching exercise improved execution of inter-professional education by clinical teachers indicating the necessity for multi strategy approaches in faculty training programs. They concluded that long-term planning is required for the development of OSTE.<sup>[16]</sup>

The study supports the evidences available through qualitative responses from faculty and students indicating that the competencies of faculty related to group discussion, questioning, communicating, interactive teaching, Providing verbal and written feedback, grading assignment, preparing

question paper, bedside teaching, discussing answer paper and procedure demonstration to be improved. Based on the analysis, the OSTE tool for group discussion skills which contains 20 items, oral feedback skills which contains 10 items, and bedside teaching skills which contains 16 items were developed through the Delphi technique and evaluated.

## CONCLUSION

Systematic reviews have concluded that Objective Structured teaching exercise is an innovative method for evaluating the teaching skills of health science faculty. A rigorous series of studies are required to determine the most effective OSTE design.<sup>[11]</sup> The OSTE tool developed has to be implemented to evaluate the teacher's competency objectively and propose for faculty development program.

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## CONFLICT OF INTEREST

N/A.

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