

# The Educational Value of Extramural Community-Based Rotations for Final-Year Dental Students

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## ABSTRACT

**Background/Problem:** Dental education programs must prepare graduates to deliver competent, ethical, and patient-centered care in diverse practice environments, including settings serving underserved populations. Traditional intramural clinics may not fully replicate the clinical complexity and social determinants of health encountered in community practice.

**Innovation:** A two-week community-based extramural rotation was integrated into the final year of a predoctoral dental curriculum, placing students in a safety-net clinical setting.

**Methods/Implementation:** A mixed-methods descriptive program evaluation used standardized pre- and post-rotation surveys and guided qualitative reflections to assess educational impact.

**Outcomes:** Students reported improved clinical confidence, efficiency, awareness of social determinants of health, and professional identity.

**Implications:** Community-based extramural rotations represent a scalable educational innovation that enhances practice readiness and supports social accountability across dental education programs. [1,16,17] [6,14] [2–4,7,8] [9,10] [3,4,11–13] [2,15,16]

**Keywords:** Community-based dental education; extramural rotations; experiential learning; underserved populations; practice readiness; CODA accreditation [1,16,17] [2–5,8] [5,6] [2–4,7,8]

## INTRODUCTION

Dental education is increasingly expected to produce graduates who are clinically competent, ethically grounded, and capable of providing patient-centered care across diverse populations. Persistent oral health disparities disproportionately affect low-income and underserved communities, underscoring the need for educational models that prepare students to practice effectively in such settings.

While intramural dental school clinics remain essential for foundational training, these environments often lack the socioeconomic complexity, access barriers, and workflow pressures characteristic of community-based practice. Community-based dental education (CBDE) has therefore emerged as a pedagogical strategy to bridge this gap by situating learning in authentic clinical environments. Prior studies demonstrate that CBDE enhances student confidence, clinical efficiency, cultural humility, and readiness for independent practice. [1,16,17] [2–5,8] [3,4,11–13]

## Theoretical and Conceptual Framework

This educational innovation is grounded in experiential learning theory and professional identity formation. Kolb's experiential learning cycle emphasizes learning through concrete experience, reflective observation,

abstract conceptualization, and active experimentation. Community-based clinical environments allow students to engage in each phase of this cycle under real-world constraints.

Professional identity formation further supports the use of extramural rotations. Repeated exposure to underserved populations and safety-net practice environments enables students to internalize professional values related to service, ethics, and social responsibility. Alignment with Commission on Dental Accreditation (CODA) standards reinforces competencies in professionalism, communication, and patient-centered care. [1,16,17] [5,6] [6,14] [2–4,7,8]

**Innovation Description**

Final-year dental students completed a structured two-week extramural rotation at an urban community health center serving predominantly uninsured and underserved populations. Under faculty supervision, students delivered comprehensive general dental care, including diagnostic evaluations, restorative procedures, simple extractions, pain management, and patient education.

The extramural setting required students to manage time efficiently, communicate effectively with diverse patients, and adapt to resource-constrained environments. Pre-rotation orientation, ongoing formative feedback, and post-rotation reflection were integrated to reinforce learning objectives. The model was designed for transferability across institutions with established community partnerships. [1,16,17] [2–4,7,8]

**Methods and Evaluation**

A mixed-methods descriptive program evaluation design was employed. Standardized pre- and post-rotation surveys assessed student self-efficacy, perceived clinical competence, professionalism, and understanding of community health. Guided qualitative reflection prompts captured experiential learning and professional growth.

Seven final-year dental students from the most recent academic semester completed all evaluation components. Quantitative results were summarized descriptively, while qualitative responses were reviewed thematically to identify recurring patterns. The evaluation prioritized educational relevance and implementation of insights rather than hypothesis testing. [5,6] [9,10] [3,4,11–13]

**RESULTS AND OUTCOMES**

Survey findings demonstrated consistent improvement in student self-efficacy following the extramural rotation. Students reported greater confidence in communicating with underserved patients, improved efficiency in managing clinical workflows, and enhanced awareness of social determinants of health.

Qualitative reflections corroborated these findings, highlighting increased empathy, strengthened professional identity, and a heightened appreciation for dentistry’s role in addressing access-to-care challenges. [1,16,17] [6,14] [2–4,7,8] [3,4,11–13]

Figure 1. Logic Model for the Extramural Community-Based Dental Rotation

<b>Inputs</b>	<b>Activities</b>	<b>Outputs</b>	<b>Short-Term Outcomes</b>	<b>Long-Term Impact</b>
Faculty supervision; community clinic; students; patients	Clinical care; patient education; reflection; feedback	Completed rotations; treated patients; reflections	Increased confidence; efficiency; professionalism	Practice-ready graduates; improved access mindset

**DISCUSSION AND IMPLICATIONS**

These findings suggest that even short-duration community-based rotations can yield meaningful educational benefits when intentionally designed and aligned with accreditation standards. Students experienced levels of

autonomy, efficiency, and ethical engagement that may be difficult to replicate consistently within intramural settings.

From a dissemination perspective, this innovation demonstrates relevance beyond a single institution. Community-based extramural rotations can be adapted to diverse geographic and institutional contexts, including rural clinics and federally qualified health centers. Faculty development, structured assessment, and strong community partnerships are critical for successful implementation. [2–4,7,8]

### Limitations

This evaluation is limited by a small sample size and reliance on self-reported outcomes. As a descriptive program of evaluation conducted at a single institution, findings may not be generalizable. Future multi-institutional studies incorporating objective performance measures would strengthen the evidence base. [9,10]

### CONCLUSION

Community-based extramural rotations represent a valuable educational innovation that bridges academic training and real-world dental practice. By fostering clinical competence, adaptability, professionalism, and social responsibility, such rotations contribute to the development of practice-ready graduates. Continued evaluation and dissemination of scalable CBDE models are essential to advancing dental education and addressing oral health disparities. [1,16,17] [2–5,8] [2–4,7,8] [2,15,16]

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### Conflict of Interest Disclosure

The authors declare no conflicts of interest.

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