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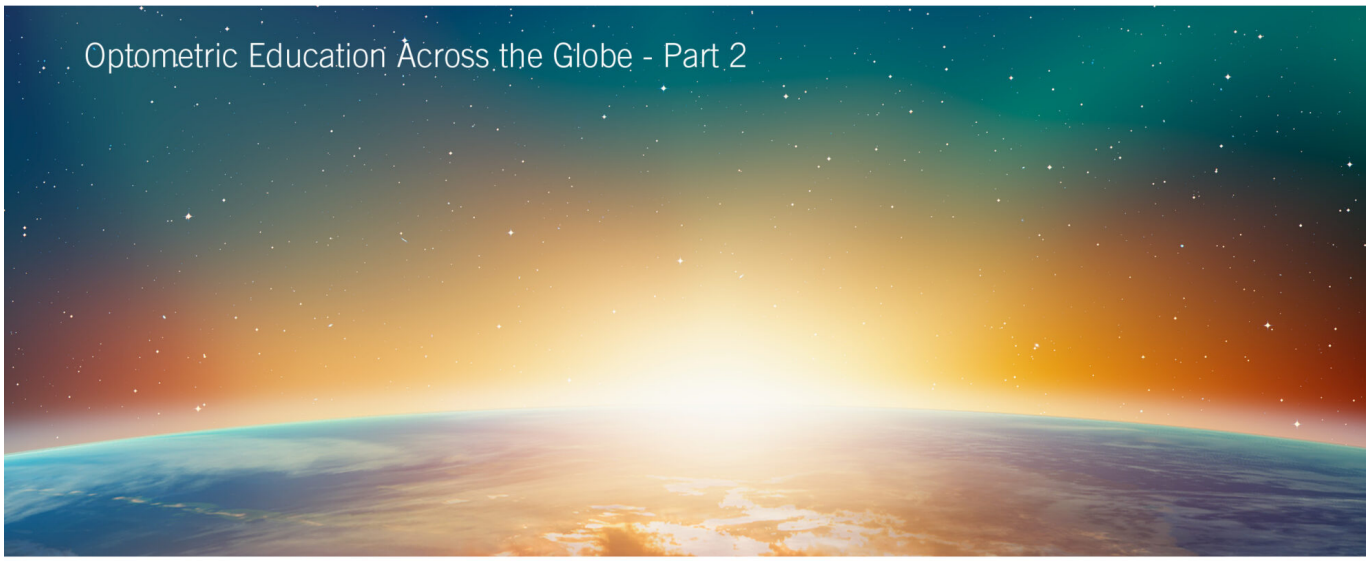

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Facilitators and Barriers of Clinical Learning in Optometry: A Qualitative Study in a Low-Resource Setting

Boaz Mucunguzi, Moreen Tumwine, Walker Guti, Ian Munabi, Sarah Kiguli, Arild Raaheim, Aloysius G. Mubuuke | Optometric Education: Volume 50 Number 3 (Summer 2025)

Abstract

Background: There is a scarcity of studies on clinical training in optometry training programs especially in low-income countries. This study set out to explore the facilitators and barriers to optometry students' clinical learning within a low-income country.

Methods: This qualitative study used in-depth interviews with 16 undergraduate optometry students.

Results: Supportive environment, exposure to a variety of cases, and hands-on practice facilitated students' clinical learning while restriction on areas of hands-on practice, negative attitudes from staff, and limited space were barriers.

Conclusion: The importance of a supportive learning environment together with hands-on practical opportunities is consistent with the social constructivist theory of learning.

Keywords

barriers, clinical learning, clinical training, facilitators, optometry

Background

Visual impairment (VI) is a global challenge[1] with about 2.2 billion people living with some form of VI.[2] Of these, 80% of near VI is in sub-Saharan Africa[3] while distance VI in low- and middle-income regions is four times higher than in high-income regions.[1] A shortage in human resources for eye health is a huge burden in sub-Saharan Africa.[4] For example, Uganda's population of over 40 million is served by 40 ophthalmologists.[5] To respond to the need, in 2014 Uganda introduced a 4-year undergraduate optometry degree program at Makerere University to train optometrists and the first cohort graduated in 2019.

Globally, the optometry degree program takes a duration of 4 to 6 years[6] and includes a combination of both theoretical and clinical modules.[7] At Makerere University, students undergo an intensive clinical training (CT) in the eye clinic at Mulago National Referral and Teaching Hospital (MNRTH), optometric teaching clinic, and Makerere University hospital for 8 weeks at each site during their fourth year. According to their optometry curriculum, the CT aims at developing optometry students' clinical skills

such as history taking; observation abilities; performance of a comprehensive eye examination including preliminary screening, refraction, binocular vision assessment; ocular health assessment; and formulation of a comprehensive and shared management plan. This aim of CT targets level three (applying) of the lowest three levels, and the highest three levels (analyzing, evaluating and creating) of the revised Bloom's taxonomy.[8]

The aim of CT in health professions education is to incorporate theory and practice in a controlled setting to enable students to learn appropriate behaviors, skills, and attitudes.[9] In optometry training programs, clinical learning (CL) involves students giving complete care of patients under the supervision of an optometrist for a given period of time towards the end of their training.[10] Constructivism is the philosophical principle underpinning CL.[11] But also, CL occurs in a social milieu of the clinical environment characterized by interaction between students themselves, supervisors, patients and caretakers.[12] Hence CL can be explained by the social constructivist theory of learning.[13]

A clinical learning environment (CLE) that is without fear and inspires respect for the students[14] stimulates students' development of self-confidence and competence.[15] Importantly, where students are adequately prepared and supported, engagement in clinical settings leads to valuable learning.[10] A study by Denial and colleagues[16] shows that feedback and supervisor demeanor (insightful, friendly, and respectful) are behaviors that contributed most toward increasing students' clinical confidence. In Uganda, undergraduate medical students perceived MNRTH as having good learning opportunities because of the large number of patients, wide case mix and unrestricted access to patients.[17]

On the other hand, supervisor demeanor (negative qualities such as being close-minded, unreceptive, or yelling) contributed least to students' confidence levels.[16] Inadequate guidance and supervision, inadequate equipment, higher numbers of student teacher ratio, lack of resources, and theory-practice gap can negatively affect the quality of learning in the CLE.[12,18,19] Also, inadequate workplace affordances, few opportunities for students' participation, lecturers' inappropriate approaches to clinical teaching[17] and overcrowding[20] have been identified as challenges to CL within low resource settings.

Several studies on CT have concentrated on students in medical and nursing education, leaving scarcity in optometry training programs especially in low- and middle-income countries. With the known disparities in employment settings, scope of practice, and clinical supervision models, discoveries from these disciplines may not be so easily applied to the optometry profession.[21] Therefore, this study set out to explore possible facilitators and barriers to optometry students' learning in a CLE at MNRTH in Uganda.

Methods

Study design: This was an exploratory qualitative study involving all the 16 undergraduate fourth year optometry students at Makerere University in Uganda during second semester of the 2022/2023 academic year. Participants were selected because they had undergone CT and thus suitable to provide an in-depth understanding of the possible facilitators and barriers to CL. Data was collected using one-on-one face-to-face in-depth interviews at the end of the 8 weeks of students' clinical rotation at MNRTH.

Study setting: MNRTH is located on Mulago Hill in the north of Kampala Capital City, west of the university's college of health sciences. It is the largest hospital within the country. The hospital is approximately 1.8 km from the college campus.[17] The eye clinic is located south of MNRTH at level 5 of block H. It is staffed by eye care professionals employed by the hospital as well as faculty members from college of health sciences. The eye clinic offers comprehensive eye examinations, vision testing, diagnosis and treatment of eye conditions, and pre- and postoperative care.

Data collection and analysis: Participants willingly created appointments indicating time and place of

convenience where the interviews would be conducted from. They were followed up with a phone call 1 day prior to the interview for a reminder. In-depth interviews were conducted from isolated places to maintain privacy and confidentiality. The interviewer initially asked open-ended questions that were followed by more probing questions with subsequent questions derived from the interviewee's response.[22] The questions had two main areas of focus, the first explored the learning opportunities (facilitators) and the second, barriers (hindrances) to CL. The interviews lasted 30-45 minutes and were audio recorded and later transcribed verbatim. Data saturation was achieved after 12 interviews. This was the point where no new information was coming up from the participants' responses. Four more participants were added to confirm data saturation and to make sure that no information was left behind. Inductive thematic analysis was used to analyze the qualitative data.[22] Data collection and analysis were done concurrently. Data was analyzed by three members separately, and they met frequently to discuss and reach a consensus on the findings.

Data quality control and rigor: To ensure credibility, an experienced research assistant with knowledge in qualitative techniques and interviewing was recruited to conduct the interviews while the principal investigator was taking notes of the interactions. The ideas raised from the audios, transcripts and notes were used to plan for the subsequent interviews. This iterative process of reviewing earlier interviews helped the team to identify areas where additional probing or clarification might be beneficial while maintaining the consistency of the core questions. To provide reflexivity, the principal investigator, a graduate optometrist who was training in health professions education recruited two data analysts who had no knowledge of CT. They gave their views through data collection and analysis to minimize bias.

Ethical considerations

Approval was granted by the School of Medicine Research and Ethics Committee (SOMREC) of the university. Participation in the study was voluntary and written informed consent was obtained from all participants. All methods for data collection were performed according to the guidelines and regulations of the Declaration of Helsinki.

TABLE 1
Interview Broad Question

Qn 1:
In your view, what things do you regard as having positively contributed to your learning while at the eye clinic of Mulago National Referral Hospital?
What did you like about the clinical rotation at the eye clinic of Mulago National Referral Hospital?
What do you want to be done again and again, and by who? What should be emphasized?
Qn 2:
In your view, what things do you regard as having negatively contributed to your learning while at the eye clinic of Mulago National Referral Hospital?
What did you not like about the clinical rotation at the eye clinic of Mulago National Referral Hospital?
What don't you want to be done again and again, and by who? What should be dropped?

Table 1. Interview Broad Questions. Click to enlarge

RESULTS

Demographics Information

The study comprised of 16 participants with seven females and nine males. Thirteen of these were between 21-25 years. 81% (n=13) of the participants held a higher secondary school certificate while 19% (n=3) possessed a diploma in ophthalmic clinical medicine, as their highest level of education prior to joining the undergraduate optometry degree program.

Themes that emerged from the data

One theme with two corresponding sub-themes emerged from the qualitative data.

Theme: Learning in the clinical environment at the eye clinic of MNRTH.

Sub theme 1: Facilitators of clinical learning at the eye clinic of MNRTH.

Participants appreciated the many opportunities for learning such as the hands-on practice, real-life application of knowledge when working with patients, and observation as well as explanation from experienced professionals. Students labelled these as important methods of learning during their CT.

> *We learned from their expertise because whenever a doctor saw a case, they briefly explained it and worked as we observed (Participant N).*
>
> *Working with a real patient who is experiencing vision problems is different from just practicing on artificial models or inducing errors on fellow students (Participant P).*

Respondents reported that the CLE at the eye clinic was highly collaborative and supportive. They highlighted the support from their supervisors, fellow students, and positive interactions with some hospital staff as to have significantly facilitated their CL.

> *Our supervisor was very approachable and always willing to explain things (Participant G).*
>
> *We discuss, exchange views and learn from one another's experiences (Participant I).*

Participants emphasized the importance of timely feedback that helped them to reflect, identify areas of improvement, and refine their skills. They received feedback from ophthalmologists, nurses, lecturers, optometric interns, fellow students and in logbooks.

> *After examining a patient and presenting the findings, we receive feedback right then and there. They review our work and identify any mistakes or areas of improvement (Participant I).*
>
> *Our supervisors sign our logbooks, and they also comment (Participant J).*

Optometry students emphasized the exposure to a variety of cases as to have greatly enhanced their CL. They mentioned that they encountered a wide range of eye conditions, some of which were complex, unique, and uncommon which helped to expand their clinical knowledge.

> *Being in a national referral, we were exposed to diverse and complex cases, including cancers and severe traumas (Participant H).*
>
> *I was exposed to working with different age groups and understanding their specific needs (Participant E).*

A majority (88%) of the respondents mentioned that positive patient interactions during their CT enhanced their confidence, clinical skills and knowledge which improved as they saw more patients. Respondents mentioned that patients were generally compliant and receptive to the care provided.

The patients were obedient, making it easier for me to work with them (Participant H).

I became more proficient in performing accurate refractions and conducting visual acuity tests for children (Participant N).

The lack of performance-related pressure and strict time constraints enabled students to learn at their own pace and spend ample time with patients. They expressed that they had sufficient time to comprehensively grasp each case.

The absence of pressure enabled us to take our time and learn at our own pace, ensuring a more comprehensive understanding of each case (Participant L).

We had ample opportunities to practice and interact with patients, which allowed us to see and touch, gaining a deeper understanding of the conditions we encountered (Participant E).

Sub-theme 2: Barriers of clinical learning at the eye clinic of MNRTH.

Fourteen respondents mentioned that they felt that their hands-on practice was restricted to refraction and they were not utilized to their full potential. They showed concern over the lack of chance to practice all aspects of knowledge and skills that were covered in class.

Despite having covered a variety of eye conditions and procedures, we were only seen as specialized in refraction (Participant A).

This limitation restricts our exposure to certain diagnostic procedures and techniques (Participant F).

Some participants were affected by negative attitudes from some hospital staff within the eye clinic. They mentioned instances where they were made to feel inferior and neglect of their opinions.

While we were open to listening to their views, they were not as willing to listen to ours, which created a bit of a challenge in terms of effective communication and collaboration (Participant D).

…we say our perspectives or insights to make a contribution to the case. However, encountering individuals who dismiss or disregard our opinions without giving them the recognition they deserve was frustrating (Participant C).

Respondents mentioned missing out on learning opportunities due to the small space in consultation rooms compared to a big group of students undergoing clinical rotation in ophthalmology. Overcrowding made it difficult to observe and participate in all cases.

The larger group size may result in difficulty hearing or fully observing certain aspects of the clinical procedures or discussions (Participant H).

The limited space in the consultation rooms made it difficult for all the students to be present during consultations (Participant F).

Some participants faced the challenge of language barrier when communicating with patients who didn't speak English. Some were not citizens and others were from different regions of the country which made it hard for them to speak or understand the common local language used by the patients at the eye clinic.

> *Luganda was not a language that I was familiar with, and it posed difficulties when communicating with patients who didn't speak English (Participant P).*
>
> *As a foreign student, it can be difficult to gather information about their condition and understand their needs (Participant O).*

Limited availability of some equipment hindered optometry students' learning in certain areas. For example, respondents mentioned that failure to access the slit lamp biomicroscope limited their practice and skill development in using the instrument.

> *We couldn't use the slit lamp for learning purposes, even though it's an important tool for optometry (Participant K).*
>
> *There is a lack of specific tools and a child-friendly environment to effectively examine young children in the optometry section (Participant A).*

Although participants noted positive patient interactions, some mentioned to have faced challenges with complex cases, demanding patients, and those specific to patients of different age groups such as the elderly and children.

> *Children can be more difficult to handle… may exhibit fear or resistance during examinations. They may cry or become uncooperative (Participant A).*

Discussion

The purpose of this study was to explore the facilitators and barriers to CL among optometry students in CT at the eye clinic of MNRTH in Uganda. Key findings are consistent with previous research carried out at MNRTH with medical students,[17] and healthcare providers and administrators.[20]

Findings from the current study demonstrate that CT at the eye clinic offers optometry students with the chance to see and to do real life cases in the presence of experienced supervisors which provides learning opportunities completely different from a classroom or simulated setting. The opportunities are enhanced by a good supervisor-student relationship which greatly encourages students to feel comfortable and to be without fear because of the confidence that the expert would not only correct the mistake but also guarantee the safety of the patient. These findings are consistent with the study by Kirkman[10] where optometry students saw the clinical rotations as opportunities to try the everyday reality of work and supervisor-student relationship as an important factor in their placement.

This study shows that surrounding students with supportive individuals from faculty, hospital staff, patients and peers create a safe CLE where students can rely on these individuals as critical pillars playing a key role as mentors and advisors. Such support ensures that students receive timely feedback which in turn improves students' clinical performance. The long-term effect is that this will boost students' motivation and hence skill development as is evident in this study. Other studies have shown the same

effects that a supportive CLE is important for student learning,[23] valuable learning experiences[10] and impacts students' knowledge, attitudes, skills and interest in their training.[24] Feedback in a CLE has also been shown as essential for the student's motivation, growth, self-esteem, confidence and overall improved clinical practice.[25]

Exposing optometry students to a variety of patient conditions helps them to acquire valuable insights and practical experience which improves their clinical competence in eye healthcare. The exposure and participation in the clinical environment offer a platform in which students can witness and appreciate what was covered in theory. It is therefore important to expose students to a CLE, and the earlier this happens in their training, the better for mastery of competency and professional development. Similar findings were reported by Sharif & Masoumi,[15] among nursing students in Iran. However, unlike Kirkman et al[10] participants in this study did not highlight the development of professional identity.

The constraints imposed by restriction on areas of hands-on practice, space, and equipment can significantly affect students' CL in several ways. The limitation posed by areas of hands-on practice and equipment can restrict learning opportunities and prevent students from fully exploring and engaging in specific diagnostic and treatment procedures commonly used in the field. It is therefore essential to allow students an all-round practice with guidance, and to provide them with the basic equipment for use while in CT. Limited space can result into overcrowding due to the big group of students and this can block students from observing and can also limit their participation. At the end of the day; students may miss out on the intended learning outcomes. This highlights the need to regulate the number of students in consultation rooms or to allocate more space at training sites to improve the learning environment and ensure better clinical training experiences. These findings are consistent with those identified in others studies.[12.17,18,19,20]

Negative attitudes from the staff can create a hostile learning environment that can lead to hesitation of students to ask questions or seek guidance, hence missed learning opportunities. In order to have a productive CT, the CLE should be inclusive and receptive. It is important for all participants to respect and value each other's opinions, regardless of their level of experience. In a CLE, staff should provide an environment in which students feel free to share their insights, and they should be heard. That way, the experts can then know how and where to help the student in a way that is not demeaning. Dismissing students' view without listening may make students to feel incompetent which in turn may lower their self-esteem and demotivate them from active participation in the CLE. Denial, Nehmad, & Appel[16] also reported negative attitudes as to affect students in a CLE.

It is important to note that CT at the eye clinic of MNRTH is to a large extent successful in developing the optometry students' clinical skills as respondents mentioned having gained ability of diagnosing and managing various eye conditions; skills in refraction and binocular vision testing; and attitudes like, effective communication and self-confidence. Students noted that while at other training sites, they undertake hands-on practice for all procedures including those that were restricted at MNRTH.

Strength and Limitations

The strengths of the study lie in the use of an exploratory qualitative design and in-depth interviews which provided very rich descriptions of optometry students' expressions of the facilitators and barriers of their CL. Key implications for practice arise. First, the facilitators of CL are important factors that contribute to an effective CT hence, there is a need for optometry educators to prioritize them. Second, the barriers are significant challenges to CL and addressing them can enhance the benefits of CT.

This study is limited by the fact that only students' views were sought without input from their supervisors.

Conclusion

The importance of a supportive and collaborative learning environment together with hands-on practical opportunities seen in this study is consistent with the social constructivist theory of learning. It is therefore best for optometry students to undertake CT in eye clinics so as to develop the expected competences prior to graduation. The role of the optometry educators would be to provide a CLE that maximizes the identified facilitators while minimizing or eliminating the barriers of CL as identified in this or other studies. The kind of opportunities that CT in the eye clinic offers to optometry students are very valuable approaches to CL that may not be covered in textbooks and hence should be utilized. Subsequently, more research is suggested looking at the perceptions of faculty, hospital staff and patients towards optometry students' CT in the eye clinic. Research on students' and preceptors' feedback literacy would yield an understanding of how optometry students receive and act on the feedback while in the CLE.[26]

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Authors declare that they have no competing interest.

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PEER REVIEWED

New Optometry Education in Eastern Europe: The four-year optometry program in Moldova augments visual health care

Irene Langeggen, Jan Richard Bruenech | Optometric Education: Volume 50 Number 3 (Summer 2025)

Abstract

Absence of spectacles and visual aides are both major causes of vision problems and unnecessary blindness. A modern society expects inhabitants to see at any distance and all day long. General education depends on visual capabilities and correct spectacles. Optometry is a young profession in Moldova. The educational program mirrors the Optometry Diploma in Europe. The challenge is to build a sustainable professional optometry program, enabling optometrists to work independently to enhance visual health care. Today the bachelor program aims to graduate students to fulfil the World Council of Optometry's definition of an optometrist.

Keywords

eye heath competencies, knowledge transfer, optometry education

Introduction

In July 2021, the UN adopted the resolution "Vision for Everyone: accelerating action to achieve the Sustainable Development Goals.[1] The resolution is recognized by 193 countries and deals with eye health and good vision as an important contribution to accelerating measures to achieve sustainable development. The optometric profession is important in reducing unnecessary blindness caused by missing spectacles and uncorrected refractive errors.[2–4]

The society expects you to see and vision is an important sense. Reduced accessibility of spectacles and vision aids are the primary reason of vision problems and unnecessary blindness.[5–8] In Moldova, there are 830,000 people with severely reduced vision, of which 19,000 are blind.[9] Eye health services have a direct impact on sustainability goals.[10,11] Low-cost countries experience challenges with vision problems affecting general education, professional practice,[6] illness[12] and quality of life[13].

There are significant variations in Europe when comparing vision health services and vision aids. This is present in scope of practice of the optometric profession (ECOO Blue Book | ECOO).[14] Norwegian optometrists are authorized to diagnose ocular disorders, use diagnostic medications, and treat children as well as elderly patients. Scope of practice include vision assessment for driving, low vision care, fitting contact lenses including advanced care, health promotion, visual ergonomics, to mention some areas of health responsibilities. Norwegian optometry education follows national guidelines[14] and is accredited according to the European Diploma through the European Council of Optometry and Optics (ECOO).[15] Norwegian bachelor's, master's and doctoral educational programs within optometry are internationally recognized. The University of South-Eastern Norway (USN) is the only one in Norway with an optometry program. The courses promote a complex professional practice and are highly rated by ECOO (European Diploma in Optometry | ECOO).[14]

In 2015, ophthalmologists were the only profession providing eye health care in Moldova and they treated ocular diseases. There were zero registered optometrist.[16]There was a need to strengthen the vision health service and improve access to qualified healthcare personnel with competences in vision examination and prescription of spectacles. The training for the ophthalmologists was at the State University of Medicine and Pharmacy “Nicolae Testemitanu” (MD-USMF). Moldova recognized optometrist in 2015 through the ” Clasificatorul Ocupa?iilor Din Republica Moldova, 2014?. However, the country and region did not provide an academic education for optometrists.

Moldova is one of Europe’s poorest countries, with reduced resources, limited health services and an aging population. In 2015, the eye health services consisted of 214 ophthalmologists, who were to look after a population of 2.8 million.[17] The aim of the project was to establish an education to improve the population’s access to eye health services and vision aids, as well as better vision conditions for students, employees, and safer driving conditions. Through the education, MD-USMF would gain a new health profession education, opportunities for international cooperation and recognition. USN will have the opportunity to contribute with knowledge transfer and an international academic network.

The Norwegian ministry of education presented in 2015 a call through Directorate for higher education and competence (HK DIR)[18] to build capacity of professions between institutions. At USN, staff members have worked to build network and skills in international collaborations.

The Eurasia program of HK DIR was launched in 2015 with the aim of cooperation between educational institutions, increasing respect for human rights, competence building, active student participation and employee exchange. USN and MD-USMF was granted “CPEA-2015/10066 – Moldova – Norwegian collaboration program in optometry. Enhancing primary eye health care in Moldova”, a 4-year long project.

This article will describe knowledge transfer within the project and how an innovative ecosystem supported and involved an established optometry program in Norway and one to be developed in Moldova. Aim was to establish an optometry program at a bachelor level which met the European Diploma requirements given by ECOO.[15]

Network and collaboration to enhance visual healthcare in Moldova

Norway and other UN countries committed themselves in 2015 to promote and work to achieve the UN’s 17 sustainability goals (SDGs) with a focus on education.[19] The goals which deal with poverty, hunger, health, education, equality between the sexes, economic development and environmental considerations must be achieved by 2030. Vision is important to achieve mentioned goals. The UN promote collaboration through SDG #17, with focus on building networks and collaborations. This involves processes that require collective effort from authorities, educational institutions, companies, organizations and other stakeholders at local, national and international level. It emphasizes the importance of establishing strong and effective partnerships to mobilize resources, share knowledge and implement sustainable solutions.

The project aimed to create learning facilities with optometric equipment at MD-USMF and enable teaching of optometry at international level. Teaching and promote research across borders in a cross-cultural environment, became an important assignment for the project members. To avoid misunderstanding, meetings focused on how to avoid cultural and language barriers. We also faced the administrative route of approving a new optometry program, within an established medical university, MD-USMF health ministry and educational ministry in Moldova. The ecosystem included not only universities, but governmental stakeholders and international professional bodies, like the European Council of optometry (ECOO). The project members created networks nationally and internationally provide knowledge about optometry as a health care profession. Partnerships were essential to enable

the formal recognition of the new optometry education within the MD-USMF in Moldova and Ministry of Education.

The World Council of Optometry[20] has a definition of the optometrist which presents responsibilities, education and scope of practice in a global perspective.

> "Optometry is a healthcare profession that is autonomous, educated and regulated (licensed/registered), and optometrists are the primary healthcare practitioners of the eye and visual system who provide comprehensive eye and vision care, which includes refraction and dispensing, detection/diagnosis and management of disease in the eye, and the rehabilitation of conditions of the visual system."

The project has worked according to WCO's definition of optometry, the Vision 2020 resolution[21] and the UN's sustainability goals.[22] A health collaboration agreement between Norway and Moldova was signed in 2014: "MOU Ministry of Health and Care Services of the Kingdom of Norway and the Ministry of Health of the republic of Moldova on the cooperation in the field of health and medical sciences". The agreement aims to promote cooperation and skills development within health services. The project used this agreement to anchor the overarching aim of exchange of competence and transfer of knowledge, to promote the new optometry program.

The bachelor's program in optometry at MD-USMF was developed in accordance with ECOO's requirements for knowledge, skills and competence for an optometrist. This framework has been established through cooperation between educational institutions and optometric organizations in Europe. The framework together with established subject plans at USN and the medical and ophthalmology education at MD-USMF created the foundation for a new 4-year optometry program. The program allowed for theoretical knowledge, clinical skills and practice, which also met the European Diploma of Optometry. Recognition in Europe was and is important to MD-USMF, to be able to offer an education to students nationally and internationally.

In the beginning of the project period, MD-USMF had only 6-year programs in medicine and pharmacy, education doctors and pharmacists. The challenge by proposing a professional education of 4 years demanded reconstruction of accreditation processes and faculties. Another example of difference in educational level, was the nursing education. The nursing education was at upper secondary level, not at a university level. There was an absence of health educations at the bachelor level. The optometry education became a pilot to proof the need for shorter educational programs.

The optometry program was promoted through MD-USMF committees, at faculty level and centrally at the university boards. The program was discussed and approved by education and health ministries. The program was approved and in 2017 the first nine optometrist students were admitted at MD-USMF.[23] A new faculty was also created to be able to embrace other educations, which should also be raised to university level, for example nursing.

Optometry is an international professional arena and international cooperation must be promoted early in students' education. The project included exchange between the institutions among students at bachelor's (63 students representing both universities), master's (two Norwegian students) and PhD level (two students from Moldova), academic and administrative staff (48 in total).

The optometry program accepted and enrolled 16 students fall of 2017. Since first graduation in 2021, 35 students have graduated as optometrists from MD-USMF.

New opportunities with new education

Increasing competence in vision must be mutual. Establishing a completely new education at another university is demanding. Through the project, USN and MD-USMF have gained insight into administrative routines and requirements for cooperation. It takes years to gain insight into internal routines and procedures, since this is related to trust between staff members. Respect for one's own democracy and service path has been strengthened and challenges shared in the partnership. The democratic processes existing at USN is not dependent on ministers or leadership of the country. The democracy at MD-USMF is influenced by leadership and political movements. Years of collaboration with a focus on mutual respect have provided a good climate for cooperation and respect for differences in approval systems of educational programs. The approval of the new optometry program took only 2 years in Moldova. In Norway, a 4-year timeframe is needed to receive approval from authorities and minister of education.

Optometry in Moldova need role models to explore the need of competences and scope of practice of an optometrist in context of own health care system. Exchange of students and staff members were essential to build common understanding of optometry. USN received two PhD candidates from MD-USMF. The PhD students were ophthalmologists who should teach optometry to optometry students at MD-USMF. The unfortunate situation of war and travel restrictions influenced the progress of studies. Graduation plans are for 2025. The PhD candidates promoted research collaboration and skills development. During the collaboration period, several articles[21] and conference papers have been presented, both nationally and internationally.

The Norwegian bachelor students took part in clinical activities, both as observers at the eye ward. And as teachers for optometry students in Moldova. They should gain perspectives on the role of the optometrist and the requirements for competence to meet people with vision problems in different situations. The experiences increased clinical understanding, but also the meaning of human dignity and dignified living conditions, when caring for peoples' vision. One example was when USN three final year bachelor students and two master students in optometry, together with students from Moldova, assessed vision and provided spectacles to 60 men serving a life sentence in a prison with no attention to vision.[24] Alongside of any screening in a community or prison setting, students from both countries worked side-by-side. On exceptional advantage to this project, was to collaborate with Help Moldova or I-Care, Norway, which funded one Norwegian optometrist to travel to Moldova. His aim was to improve low vision care, USN and MD-USMF, to enhance education.[25]

Going forward, exchange will be ensured through Erasmus Global + funds which were granted in 2021-to 2024.

Knowledge transfer through teaching, observation and experience was useful for showing the competency level of Norwegian and international optometry. The optometry students and lecturers from MD-USMF were taught in Norway, as well as participated in an international vision research conference hosted by USN The optometry program at MD-USMF's ophthalmology department is mainly taught by ophthalmologists. The exchange between professionals from Moldova and Norway, enhanced the scope of practice and acknowledgement of optometry. There is no role model as an optometrist in Moldova, except for a Norwegian optometrist who works extensively with visual rehabilitation of the visually impaired.[25] Optometrists must develop professional scope of practice and they need to work with ophthalmologists to care for the patient.

Optometry is a demanding field when it comes to equipment. Through the project, equipment was purchased for teaching and guidance, that is, several vision examination rooms were arranged at the ophthalmology and optometry department at MD-USMF. This also provided the opportunity for ophthalmologist to use the equipment for patient care. Teaching benefited from students meeting patients from day one. Early patient care experiences were enhanced from day one. Ophthalmologists also recruited patients for demonstrations and grand rounds. This was possible since teaching facilities

of the optometrists were located within the facilities of the eye ward.

New optometrists must contribute to new knowledge, skills and competence to prevent eye disorders and provide eye health care to the population. The optometric program needs recognition, acknowledgement and support to enable young students to become optometrists. These young optometrists face the challenge of building a professional organisation and to promote the education in international fora. They must create a profession that is not only known by 75% of the population, but also well recognized in the country.[9] ECOO are well aware of the education of 240 ECTS and its aim to meet the demands of the European Optometry diploma.[15]

Conclusion

The aim of this multifaceted ecosystem including two international universities, was to establish an international recognized optometry program in Moldova. The keys to success were knowledge transfer across borders and building optometric professional awareness through role models. All parties involved have focused on the values of sustainable education and mutual respect. Better vision promotes better health, education and opportunities for collaboration.

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PEER REVIEWED

Outcomes of US Optometry Exchange Program for Students from China

Meng Meng Xu, OD, MPH; Jennifer Hue, OD, MS; Guilherme Albieri, PhD; Bina Patel, OD | Optometric Education: Volume 50 Number 3 (Summer 2025)

Abstract

In China, optometry is a relatively new, yet rapidly growing subspecialty of ophthalmology. To enhance its development and promote future leaders in this field, an exchange program was formed for Wenzhou Medical University students to attend a joint program at the New England College of Optometry (NECO) and the State University of New York College of Optometry (SUNY). A feedback survey was administered to the participants who took part in the program between the years 2014-2022. This article summarizes the outcomes and perceived impact of the program on the participants' professional and personal development.

Keywords

educational collaboration, global eye care, international optometry, leadership development, optometry in China

Background

Optometry in China has grown significantly in the past 2 decades.[1] Optometry education ranges from 3-year technical programs, 4-year bachelor of optometry and 5-year medical degree in Optometry/Ophthalmology.[2-3] The 5-year program is the only one that grants diagnostic and therapeutic privileges. Currently, there are hundreds of optometry schools but only 33 offer the 5-year program. In China, optometry is a subspecialty of ophthalmology. The impetus for advancement of optometry is to meet the vast eyecare needs of the population. The increasing rates of ocular disease and myopia progression are a couple examples of why in China there is a need for an increase in eyecare workforce and access.[4-7] Sub-specialty areas of optometry are instrumental in addressing these concerns, such as myopia management, contact lenses, low vision and visual rehabilitation.

Wenzhou Medical University (WMU), Wenzhou, China, is the preeminent leader in ophthalmology and optometry education in China.[3] To cultivate the next generation of leaders in eye care, a program was developed by the New England College of Optometry and SUNY College of Optometry, in conjunction with WMU. This program, called Global Health Leadership Development Program (GHLDP), was initiated in 2014 and has been delivered annually through 2022. Each year, 10 WMU students were chosen from a highly competitive pool of applicants to participate. The students selected were either in the 5-year bachelor's in medicine in Optometry/Ophthalmology or in general clinical medicine. There are also one to two students per cohort in the master's degree. The program's goal was to inspire and equip medical students with a foundation of skills and knowledge to become future leaders in the field of eye care.

Program Description

The program provided the students exposure to the American healthcare system, a variety of presentations on optometry topics such as low vision and specialty contact lens, leadership development, insights to research related to eye care and more. The program was divided into 2 sessions: 2 weeks at the New England College of Optometry (NECO) (**Figure 1a**) and 2 weeks at State University of New York (SUNY) College of Optometry (**Figure 1b**). Both institutions exposed the students to embrace the various cultures.

Figure 1a: NECO Sample Program Schedule

Week 1	Mon 7/22	Tue 7/23	Wed 7/24	Thu 7/25	Fri 7/26
AM	9:00-9:30 am: **Introduction and Program Review** 9:30-10:00 am: **Welcome Remarks from President** 10:00-11:30am: **Introduction to Leadership**	9:30-11:00 am: **Presentation on SUNY Optometry & Tour** 11:00 am-12:00 pm: **Using Improvement Science of Effective Organizational Change**	9:00-10:00 am: **Global Eye Care** 10:00-11:00 am: **Advancements in Dry Eye Treatment** 11:00 am-12:00 pm: **Clinical Research in Eyecare**	9:00 am-12:00 pm: **DISC Advantage: Understanding Strengths & Weakness for Success**	11:00 am-12:00 pm: **Public Speaking Workshop**
PM	1:00-2:00 pm: **Optometry in the U.S.**	1:00-2:00 pm: **Leadership, continued**	1:30-3:30 pm: **Leadership, Vision, & Engagement**	1:00-2:30 pm: **"Going Blind"** - documentary and discussion/reflections	1:00-3:00 pm: **American Museum of Natural History**

Figure 1a: NECO Sample Program Schedule. Click to enlarge

Figure 1b: SUNY Sample Program Schedule

Week 1	Mon 7/08	Tue 7/09	Wed 7/10	Thu 7/11	Fri 7/12
AM	Arrival Airport pickup	PROGRAM START 9:00-9:15 am: **Welcome - President and CEO of NECO** 9:15-10:00 am: **Program Overview** 10:00-11:30 am: **Community Health in the USA**	8:00 am-4:00 pm: **Clinic visits** NECO Center for Eye Care Roslindale Lynn Community Health Center Dimock Community Health Center Charles River Community Health Center Boston Vision (MD/OD practice) Students will be assigned to a center	9:00-10:00 am: **Visit NECO Center for Eye Care Commonwealth and NECO Clinical Training Center** 10:00-11:00 am: **Observation of clinical simulation training**	8:00-10:00 am: **Optic nerve disease class with ASIP and AODP students**
Lunch		11:45am-1:00 pm: **Welcome lunch**	**Lunch on own at clinic site**	11:45 am-1:00 pm: **Presentation on WIIU and networking lunch with OD students**	**Lunch on own**
PM	**Optometry in the U.S.**	1:00-2:00pm: **Tour of NECO Beacon street campus**	**Continue clinic visit**	1:00-2:00 pm: **Library resource presentation** 2:00-4:00 pm: **Work on final presentation**	12:00-2:00 pm: **Visit Low vision Clinic and Perkins School for the Blind**

Figure 1b: SUNY Sample Program Schedule. Click to enlarge

NECO focused primarily on healthcare services and delivery, particularly in the community health system. The SUNY College of Optometry focused on leadership and career development. Some of the program learning objectives included:

- Students will learn about the state of optometry globally
- Students will learn about American culture and its influence on the American healthcare system
- Students will learn how to integrate career planning into their educational and professional goals
- Students will gain insight into how clinical services are provided and deeper understanding of healthcare concerns within the context of cultural, social, economic and public health issues which they can apply

Program Outcomes

At the end of each session, students were required to complete a culminating project.

- Public health presentation (NECO session): a poster presentation comparing a community health center they visited while in Boston vs the way eye care is delivered in their hospital in China
- Career Plan (SUNY session): a PowerPoint presentation on their 5-year plan and steps to achieve

it and reflecting on personal strengths and weaknesses that would contribute to this goal

Virtual Program

Due to the COVID-19 pandemic in 2021 and 2022, the program was required to shift to a virtual format. To try to recreate the program, lectures were given synchronously. The participants attended via Zoom while gathered in one classroom on campus, to promote camaraderie, collaboration and exchange. Both US institutions coordinated to ensure that the content of presentations was delivered in an engaging manner. Students were required to keep their web cameras on and encouraged to interact with the presenter. While the physical site visits were not possible, virtual tours of some of the sites were provided instead.

For the Public Health presentation portion, the program faced the challenge that Chinese students could not easily access data about the US health system. Hence, the team proposed the idea of collaborating with American students on this project. The topics were changed to compare the general health system between the US and China, rather than focusing on community health centers.

Methods

A 12-question survey designed by NECO and SUNY international program departments was sent to the students via Qualtrics. The survey link was sent via WeChat, a popular social media app used in China. Each cohort has its own WeChat group that we used during the program for communication. Participation in the survey was voluntary. Participants were informed that the results may be published in a paper on the impact of the GHLDP program. The survey was active from January 8 – January 24, 2024. Two reminders were sent from the WMU program coordinator during this period.

The survey was administered in English and comprised both quantitative and qualitative, open- ended questions. To maintain anonymity, there was no tracking of emails, names or year of participation. Background information was collected on participants' current job title and if they took the course in person or online. Participants were asked to quantify on a scale of 1 to 10 how much the program positively impacted their career development and their personal development, with one being "it had no effect" and 10 being "it completely changed their development." Subsequent questions focused on the program itself. They were asked what aspect of the program they valued most followed by what was the most memorable to them with a choice of answers and an open-ended question to explain why. Finally, they were asked if they had further comments on how the program affected them and if they have suggestions on program improvement for future cohorts.

The open-ended questions were analyzed using inductive codes based on recurrent themes. The quantitative tables and analysis were done directly from the Qualtrics software.

The study was submitted to the Institutional Review Board at both NECO and SUNY and received an exemption due to the anonymity of the survey.

Results

A total of 43 participants responded to the survey, which is approximately 50% of all participants in the program. 27 participants who filled out the survey took the course in person and 16 took it online.

The first question asked about their current job role; they had to choose from a list of common workplaces for optometrists in China, including roles in public hospitals, private clinics, academia, research and industry. Since it is possible optometrists could have more than one role, the question allowed for selecting more than one answer. Nine responders selected more than one role.

TABLE 1
Current Job Roles

What is your current job role? *Select all that apply*	Percentage	Count
Patient Care - Public Hospital	44%	19
Patient Care - Private Hospital	5%	2
Patient Care - Private Clinic	0%	0
Academia	33%	14
Research	14%	6
Administrative	2%	1
Leadership	2%	1
Industry	2%	1
Student	19%	8
TOTAL	100%	52

Table 1: Current Job Roles. Click to enlarge

The majority of participants have graduated and currently work in patient care in public hospitals, followed by academia, research and private hospitals. Eight of the respondents are still matriculated in their respective degree programs. (**Table 1**).

Regarding the participants' current work title, a thematic analysis revealed the most common ones were postgraduate students (12), followed by student or intern (11), residents (10), practicing MD or OD (7). Interesting answers include 1 of each title: a full-time administrator in academia, a clinical professor in the US, a full-time research scientist, a CEO of a vision company, and a founder of a startup company. Also of interest, 10 respondents indicated that the hospitals they currently work in or are pursuing their residency or postgraduate degree (other than WMU) are among the top 10 ranked medical institutions in China. However, half of the respondents did not indicate where they currently work or study, so this number is not exhaustive.

Of those who took it in person, the most memorable part of the program was tied between site visits, exposure to optometry practice in the US and cultural experience in the US (**Table 2**).

TABLE 2
Most Memorable Experiences (In-Person Group)

Which part of the in-person OHLDP experience was most memorable to you? *Select choice*	Percentage	Count
Lectures	5%	1
Site visits	27%	6
Exposure to optometry practice in the U.S.	27%	6
Cultural experience of being in the U.S.	27%	6
Learning about my personality and career choices	14%	3
Other: please specify	0%	0
TOTAL	100%	22

Table 2: Most Memorable Experiences (In-Person Group). Click to enlarge

Nineteen participants provided more details in the comment, with the most popular being visits to the Community Health Centers as it helped them to contrast and compare patient care between the US and China. The second most memorable mention was the personality test and games. Another common mention was visiting Perkins school of the Blind and hearing about the lived experience of visually impaired people.

For those who took the program online, the most memorable part was learning about how optometry is

practiced in the US, followed by working on a project with US students and then learning about their personality and career choices (**Table 3**). Eleven participants provided more details. They mentioned that learning about optometry in the US helped broaden their career perspectives and understand the differences between China and the US They liked the opportunity to work with US students in teams and engage in rich discussions.

TABLE 3
Most Memorable Experiences (Virtual Group)

Which part of the online GHLDP experience was most memorable to you? *Select choice.*	Percentage	Count
Lectures	7%	1
Learning about optometry practice in the U.S.	40%	6
Learning about my personality and career choices	21%	3
Working on a project with U.S. students	29%	4
Other: please specify	0%	0
TOTAL	**100%**	**14**

Table 3: Most Memorable Experiences (Virtual Group). Click to enlarge

The participants were asked to rate the scale on which the program positively impacted their career development, where 10 is that it “completely changed their career development” and 1 is that it “had no effect at all” (**Figure 2**). The average rating of all 42 responses is 7.60 and the range is between 5 to 10. Since another goal of the program was to develop leadership skills, participants were also asked to rate how the program positively impacted their personal development using the same scale (**Figure 3**). The average is 7.84 and the range is between 5 to 10.

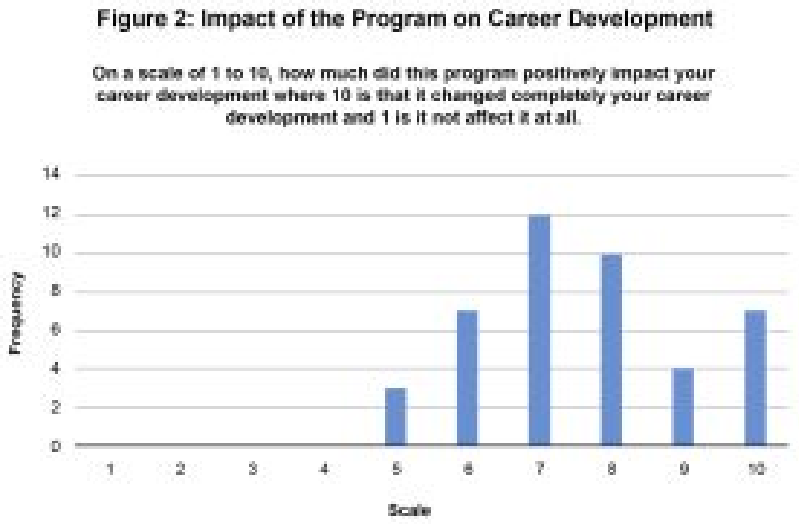

Figure 2: Impact of the Program on Career Development. Click to enlarge

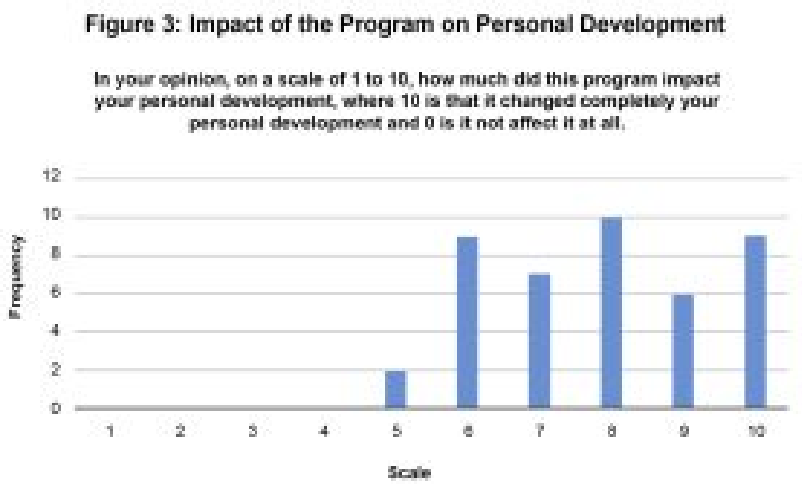

Figure 3: Impact of the Program on Personal Development. Click to enlarge

Differences between online and in person groups

In assessing the normality of the distribution for the “Impact in Career Development,” the Shapiro-Wilk test indicated a deviation from normality, W = .923, p = .007. Similarly, the Kolmogorov-Smirnov test results also suggested non-normality, D = .170, p = .003. Given these results, the assumption of normality was not met and a non-parametric test was chosen to analyze the difference between in-person and virtual attendees.

A Mann-Whitney U test was conducted to determine if there were differences in the impact on career development between participants who attended the program in person in New York and Boston (n = 27) and those who attended the program virtually (n = 16). The results of the test were not significant, U = 194.00, p = .572, suggesting that there was no statistically significant difference in the reported impact on career development between the in-person and virtual attendees. The mean rank for in-person attendees was 22.81, while the mean rank for virtual attendees was 20.63.

An Independent-Samples Mann-Whitney U test was conducted to compare the impact on personal development between participants who attended the program in-person in New York and Boston (n = 27) and those who attended virtually (n = 16). The test revealed that the difference in the impact on personal development between in-person attendees (Mean Rank = 20.93) and virtual attendees (Mean Rank = 23.81) was not statistically significant, U = 245.00, p = .458. These results suggest that the mode of attendance did not significantly affect participants’ perceived personal development.

Participants in the program, regardless of whether they participated in-person or virtually, reported experiencing a positive impact on their career and personal development. Based on the statistical analysis, the mode of participation did not appear to influence their perceptions of the program’s effectiveness in these domains.

Qualitative assessment

The next section of questions was open-ended to allow for a variety of answers. The first question asked what they found the most useful from the GHLDP program, with 29 answers. A qualitative analysis identified six main themes: Expanded knowledge, leadership development, career planning and personal development, cultural experience, teamwork/collaboration and understanding of health systems. Many respondents answered more than one theme (**Table 4**).

TABLE 4
Thematic Analysis of the Most Useful Aspect of the Program

Main Theme	Frequency	Examples
Leadership development	3	Developing my leadership ability.
Career planning/personal development	5	Providing me with a brand-new view of potential positions in my career and personal development.
Cultural experience	4	Experience cultural differences between China and the U.S.
Teamwork/communication	3	The skills of better communications and differentiating empathy and sympathy.
Expanded knowledge	4	The content about low vision services, I learned more about how to help people with low vision.
Understanding of health systems	5	Understanding the different healthcare structures of optometry.

Table 4: Thematic Analysis of the Most Useful Aspect of the Program. Click to enlarge

The participants were given the opportunity to write any further comments on how the program affected them or did not affect them. Twenty-five responders shared their thoughts. There were two comments on how to make the program better, which was repeated in the next question. A qualitative analysis of the answers showed four main themes: Broaden their horizon, improved understanding of their future development, building connections and personal growth (**Table 5**).

TABLE 5
Thematic Analysis of How the Program Affected Participants

Main Theme	Frequency	Examples
Broaden horizons	5	• I gained insights into a totally different culture. • This program broadened my horizons. • Everybody should visit Perkins School of the Blind to learn how to help blind people.
Improve understanding of future development	6	• I decided to apply for optometry school in the U.S. after doing the program. • Made me more committed to the career I chose and to become an excellent doctor, scientist, leader, innovator, and entrepreneur.
Building connections	6	• I also met lifelong friends during the program. • It was valuable to have the opportunity to make new friends and gain new views.
Personal growth	6	• This learning made me realize that I could make more progress and that I had more potential. • I got to know myself better. • I became more confident.

Table 5: Thematic Analysis of How the Program Affected Participants. Click to enlarge

TABLE 6
Thematic Analysis of the Suggestions to Improve the Program

Main Theme	Frequency	Examples
Continued education/ interaction	4	• Provide opportunities to maintain continuous connection and gathering with previous teammate, staff and faculties. • I eagerly want to study further through this program.
Expand the program	3	• Maybe can extend the whole length of this program to provide more experience. • I hope more top schools offer exchange programs.
More clinical opportunity	5	• I think we can have more experience in various clinics. • More clinic involvement. • Adding a few days of internship with proficient doctors would be advisable.
More interaction with local students	3	• It would be great if we can take several classes with students. • Perhaps more collaborative projects can be added.

Table 6: Thematic Analysis of the Suggestions to Improve the Program. Click to enlarge

In the last question, we asked for comments on how to improve the program. There were 15 answers, four of which said it was perfect. Four main themes were identified: Continued interaction/education,

Expand the program, More clinical opportunity, and More interaction with local students (**Table 6**). One student who took the program online wished it was in person and one person suggested a specific hands-on project on making glasses.

Discussion

The first question about participants' current job titles showed that most of them are still in school. Since most doctors are now required to do a residency, it takes on average an additional 6 years after obtaining a bachelor of medicine degree in optometry to be able to practice independently. With WMU being a highly ranked medical school, many students also decide to pursue a master's or PhD after graduation. Hence, most of the respondents are still in their training track. In order to see their potential for more leadership, we should have asked the respondents more targeted questions about leadership positions that can be held during training. Additionally, to conduct a fairer comparison of the success of the program, their careers should be compared to other students at WMU who did not participate in the GHLDP program. It is, however, a positive trend to see the quality of the schools where the students are furthering their education.

Based on the quantitative rating of program impact, it seems that it positively impacted all the participants in terms of career and personal development. As much as it was attempted to replicate the program, we anticipated that the virtual format would be a different experience. In our analysis, however, we found no statistically significant difference in career development impact between participants who attended the training in the US and those who completed it online in China. This finding goes against our expectations and deserves further exploration.

The limited number of respondents in the virtual group may impact the statistical power of our analysis. With only 16 respondents in the virtual group, our study may not be able to identify differences between the experiences of the two groups. Another plausible explanation is temporal proximity to the program: the in-person group completed their course pre-pandemic and thus may feel more temporally distant from the experience, whereas the virtual group's training occurred during the pandemic, potentially making their experience feel more immediate and relevant. Additionally, the assessment of the program's impact may have been influenced by the respondent's baseline experiences. Participants are not comparing two distinct experiences they each had; rather, they are evaluating a single experience through the lens of their own expectations and contexts. If individuals had the opportunity to compare both in- person and virtual experiences directly, there might be a more pronounced perception of difference in impact. Participants may also have quickly adapted to the 'new normal' brought on by the pandemic, thus normalizing virtual interactions and learning experiences to the extent that they are seen as equivalent to in-person experiences. It could also be argued that the virtual experience was well crafted and customized for the specific needs and realities of the virtual participants, resulting in equally positive responses from both groups.

When analyzing the open-ended questions that included examples of perceived impact, it was clear that the experience was overall beneficial. Many of them commented on how it broadened their horizon, but it is not clear yet if it impacted their behavior. Based on the answers, at least three of the respondents are now studying or practicing abroad, exposure to the health system in the US might have impacted their decision. Comparing the qualitative answers suggests those who came in person benefited more from the cultural exposure and those who took it online appreciated in higher numbers learning about the

practice of optometry in the US, Also, the collaborative project with US students was introduced only in the online program hence we do not know if it would be ranked more highly if it was in person as well. Many of those who did the program virtually mentioned this activity was very memorable, suggesting we should add this activity even if future programs are back to in- person.

The thematic analysis of what they thought was most useful and affected them the most is in line with the goals the program wanted to achieve: namely develop leadership skills, learn about different cultures and understand the healthcare system in the US. Other impacts include forming new relationships among themselves and with faculty and students from the US. Another important outcome is that the program seemed to reaffirm the students' decision to specialize in ophthalmology/optometry.

The suggestions on how we could improve the program were valuable for future designs. Incorporating collaborative projects in person with US students can be an added benefit to both the WMU student and the American student.[8] The way the program was designed, the student only had one to two opportunities to observe clinical care but it seems they would like to have more. The challenges of clinical observation are the amount of paperwork required to protect patient privacy and safety which the team will have to mitigate. Other suggestions such as making the program longer and having continuing education are well noted and will be further discussed with implementing partners. Last but not least, the suggestions of expanding such programs to other international institutions speak to the interests of students for cultural exchanges and learning about the health systems in another country.

Conclusions

This study demonstrates that short term cultural immersions, including a deeper understanding of various aspects of health care and leadership development in Optometry, can positively impact students in their professional and personal development. Based on the survey responses, students gained something of value from the GHDLP program. This ranged from them wanting to continue to increase their depth of knowledge and widen their educational experiences, the importance of understanding healthcare provisions, the impact of understanding cultural and social aspects in a different society, and how to develop the skills needed to be future leaders in the career pathway they choose.

The online distance learning GHDLP program required the educators to be creative in how to deliver the program content while keeping the goals and outcomes of the program similar to the in-person program. One of the survey results from the distance learning program showed that students from China highly valued the collaborative assignment with US students. This showed us that incorporating multicultural aspects and collaborative assignments to future programs whether in person or long distance enriches the educational program.

Of the students who participated in the GHDLP program, the majority continued on to complete higher educational degrees rather than joining the workforce directly after their bachelor's. "It will be of value to assess the impact of the GHDLP on their achievements 5 years later with another study. In addition, the authors also plan to collaborate with the faculty organizers of the program in China to compare the results with a control group.

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PEER REVIEWED

Training Eyecare Workers Globally: Contributions from the University of Montreal

Benoit Tousignant, OD | *Optometric Education: Volume 50 Number 3 (Summer 2025)*

Abstract

Optometric education institutions play an important part to reduce avoidable blindness and visual impairment globally. Training eyecare workers in low- and middle- income countries is one way to achieve this goal. The objective of this article is to describe how the University of Montreal School of Optometry contributes to this, through its unique residency program in community eye care. It contains an international rotation, where residents train student optometrists or eye care workers in blindness prevention programs. The residents' high level clinical training, public health coursework and experience in remote settings contribute to sustainable efforts to increase the global eyecare workforce.

Keywords

avoidable blindness, global health, healthcare workforce, optometry, training programs

Background

Over 2.2 billion people worldwide are affected by visual impairment or blindness, often caused by treatable conditions such as uncorrected refractive error or cataracts. These significant public health issues pose a substantial burden on individuals, communities and health systems, predominantly in low- or middle-income countries.[1] To reduce this burden, training human resources in eye health is a priority and aligns with strategies from major global health organizations such as the World Health Organization (WHO) and the International Agency for the Prevention of Blindness (IAPB).[1-3]

In order to increase the number of eyecare workers in low-resource settings, professionals from higher-income countries can play an important role in supporting higher education institutions or by training and upskilling existing staff in community-based programs.[4,5] Examples of such collaborations have been reported between Wales and Ghana,[6] Scotland and Malawi,[7] New Zealand and Pacific Island Countries[8] and between a consortium of North American optometry organizations and Haiti.[9]

Indeed, responding to global eye health needs requires optometrists who have a high level of clinical competency, but who are also experienced in practicing in various community or remote settings and cognisant of public health principles and sound global health practices. Residency programmes represent an opportunity for universities to train more practitioners who can contribute to reducing the global burden of visual impairment. Although there are medical residencies which incorporate components of global health,[10,11] there is a limited number of North American optometrists with public health and global health training, having obtained either residency training. As of January 2025, there were 10 postgraduate residency programs with a focus on "Community Eye Care" listed in the residency directory of the Association of Schools and Colleges of Optometry (ASCO).[12] All but one have their focus on domestic community eye care, tending to vulnerable urban populations in the US, without international components nor formal public health training. The other program is presented here.

In 2019, the University of Montreal's School of Optometry (ÉOUM) started a residency program in community eye health, which incorporates clinical training in various community settings locally, as well

as public health course work and an international rotation in a low- or middle-income country. The objective of this work is to describe this residency program's components, with emphasis on its international rotation and related outcomes, through examples in Vietnam, Colombia and Senegal.

ÉOUM's residency in community eye health

The residency program in community eye health at ÉOUM aims to develop competencies for graduate optometrists in many aspects of local and global eye health. This 1-year program includes 30 credits of specialized clinical training in community eye care (urban outreach clinics for persons experiencing homelessness[13], 1-week clinical rotations in remote Indigenous communities, school screenings in urban and remote areas, Indigenous hospital-based eye care, special needs patient clinics). Residents also regularly serve as clinical preceptors for third- and fourth-year students in ÉOUM's primary eyecare clinic. The program includes nine credits of public health courses, combining resources from ÉOUM as well as from the University of Montreal's School of Public Health (ESPUM). Topics include general public health courses as well as local and global eyecare issues. Optionally, these course credits may subsequently be transferred towards a Master's in Public Health program.

In addition, the residency program includes an international rotation, sending residents to a low- or middle-income country (LMIC) for a period of 1 to 3 months. The rotation usually takes place during the second half of the academic year, after the course work is completed and residents have accumulated some experience in different community settings. The rotation is organized to support local initiatives which are already in place to fight avoidable blindness and visual impairment, framed within each country's national strategies. This often includes training eyecare workers. Partner organizations may include local universities or non-governmental organizations (NGOs) who work towards the same goals.

The international rotation was designed to have immediate, medium-term and long-term outcomes. In the short term, for the partner country, the rotation supports and helps to improve education programs and initiatives in eye care. For the resident, the rotation provides the exposure and experience of a low-resource clinical setting, where prevalence of certain conditions may be higher than in their home environment. It also exposes the resident to different academic or community settings and increases their experience in preclinical and clinical teaching in a cross-cultural, low-resource setting.

Some of the medium-term outcomes of the placement include the enrichment of the training offered in foreign institutions and organization training eyecare professionals, by exposing students to residents trained to the highest level (category 4) of the World Council of Optometry's (WCO) competency framework,[14] which includes ocular therapeutic services. Furthermore, the rotation helps increase the number of optometrists interested and experienced in community and global eye care. It also helps foster networks for ensuing collaborations after the residents' graduation. Indeed, many past residents continue to be involved with institutions or organizations in low resource settings, taking up positions on the administrative board of NGOs, serving as guest lecturers for continuing education in LMICs, or returning for additional work stays in education or lecturing. Lastly, the residency increases the visibility of funding partners.

The main long-term outcome of the international rotation is to contribute to the elimination of avoidable blindness in developing countries, in line with the principles of sustainable development and public health. Indeed, the training of human resources in eye health and the establishment of international inter-institutional linkages are in line with the priorities of global strategies to reduce the burden of avoidable visual impairment.

The financial requirements of international rotations mainly include airfare and transportation, local room and board and afferent expenses such as travel health insurance and medical expenses (immunizations, etc.). To cover these, residents have obtained WCO grants supported by the World Optometry

Foundation (formerly WCO Fellowships)[15]. Additional support is available from the University of Montreal's international student mobility grants and in some cases, partner NGOs have also contributed to these expenses or to the resident's stipend.

In the months prior to their rotation, residents undergo a pre-departure training, which covers background information on the host country (geography, society, demographics, culture) as well as cross-cultural sensitivity and travel health and safety.

Examples of past international rotations

Vietnam (Hanoi Medical University, Hanoi)

In early 2020, a resident was sent to Hanoi, Vietnam, to teach in Hanoi Medical University's (HMU) bachelor of optometry program. HMU's bachelor of optometry program is a 4-year program, with cohorts of up to 60 students per year. The program trains optometrists to practice independent primary eye care, including the use of diagnostic agents. That program had been developed since 2010 in collaboration with the Brien Holden Vision Institute (BHVI). A three-way collaboration between HMU, BHVI and ÉOUM allowed for this first placement to take place.

Although initially planned to last 15 weeks, this rotation lasted from January to mid-March of 2020, after being interrupted by the COVID-19 pandemic. Nevertheless, during this time, the resident was successfully involved in many aspects of education and clinical care.

She taught in some preclinical labs for third-years, as well as expanded the hours of "open labs" where students could come and practice clinical diagnostic procedures and develop their clinical thinking on one another, under her supervision. The resident also mentored some of the local teaching assistants, who had recently graduated from the program.

In addition to precepting fourth-year students in primary care clinic, improving their technical skills and their efficiency during comprehensive eye exams, she also contributed to improving some aspects of operations management and record keeping in one of the clinical sites. The rotation included clinic days in ophthalmology departments in various hospitals, experiencing the professional collaborations between optometry and ophthalmology in Vietnam to manage cases of advanced cataracts, diabetic retinal disease and ocular traumas. In all, over the 6-week period, she was exposed to over 150 patient encounters and contributed to 70 hours of teaching.

The resident was also invited to partake in one of the regular meetings of eyecare NGOs involved in Vietnam. This roundtable of various stakeholders allowed her to get some "real-life" insight on how organizations can try to align their actions as part of a national strategy for the prevention and elimination of avoidable blindness.

Colombia (Fundación Universitaria del Área Andina, Pereira)

From January to March 2022, a resident was sent to Colombia, at the University of Areandina (*Fundación Universitaria del Área Andina, FUA*) in Pereira, Colombia. This institution has a 10-semester, full-time bachelor program training optometrists, fully accredited by Colombia's Department of Education. Optometrists in Colombia are competent in providing primary eye care with the use of diagnostic agents.

During her 13-week stay, the resident was involved in teaching over 150 students. Her duties included preclinic training of third-year students in binocular vision and pediatrics, contact lenses and evaluating clinical case presentations. She also precepted fourth-year students in outreach activities, which included comprehensive examinations in community organizations for persons experiencing homelessness or domestic violence.

Furthermore, she was involved in precepting fourth- and fifth-year students in primary care clinic, specialty contact lenses, vision therapy and binocular vision clinics. Her interventions were helpful to increase students' efficiency and she reinforced their diagnostic skills such as Goldmann tonometry and fundus examinations (fundus biomicroscopy and binocular indirect ophthalmoscopy). She gave presentations on glaucoma diagnosis and management, to increase the capacity of future Colombian optometrists to understand this condition, even though their scope of practice does not currently include the treatment of glaucoma.

She was exposed to many cases of diabetic eye disease, hypertensive retinopathy and parasitic ocular infections. The refraction technology present in the local clinical installations did not always include phoropters or LCD screens, which increased her experience with retinoscopy and trial lens refraction. Because of her North American training, her input was sought by FUA's administration when it considered purchasing higher technology diagnostic instruments. Finally, she was invited to teach nursing students about the role of primary care optometrists in the comprehensive care of patients. Over the course of her 3-month rotation, the resident was exposed to over 250 patient encounters and provided over 85 hours of teaching or precepting.

In the year following her residency graduation, the resident was an invited speaker at a regional South American conference in optometry and has since returned to FUA Pereira for an additional teaching rotation as a guest lecturer.

Senegal (*Association saint-louisienne pour la vue, Saint-Louis*)

In January 2023, two residents were sent to Senegal for a 1-month rotation. This placement aimed to support a local, community-based blindness prevention program. Since 2019, the *Programme de Prévention et de Lutte contre la Cécité* (PPLC) in Saint-Louis, Senegal, is a collaboration between the Association Saint-Louisienne pour la Vue (ASV) and Iris Mundial, an NGO from Montreal. Under the supervision of a local ophthalmologist, who heads ASV, the PPLC offers vision screening services at the Diougop Community Eye Center, outreach mobile clinics and school screenings in the Saint-Louis region, the second largest city in Senegal. Program staff includes nurses, opticians and a *Technicien supérieur d'ophtalmologie* (TSO), a mid-level eye cadre who provides primary eye care including refraction and ocular health assessments. Iris Mundial contributes to the training and upskilling of the eyecare workers involved in the PPLC as well as technical and equipment support.

The residents' placement had various objectives relating to staff training and upskilling as well as monitoring and evaluation of the PPLC. Their rotation was the first in-person support trip since the COVID-19 pandemic, during which most program assistance had been through distance, virtual training sessions. During their stay, the residents assisted the nurses in vision screenings, both at the clinic and in outreach clinics. They also provided the staff with training on skills such as phoropter-based refraction and tonometry.

The residents were exposed to many cases of glaucoma, advanced cataracts and other ocular pathologies during clinics with ophthalmology. They took part in school screenings, providing insight to improve screening protocols and operations management to increase sensitivity and specificity. The residents also reviewed the program's tools and methods used for eye health promotion during the PPLC activities. They also provided training of the optician and operations management improvements for the PPLC's optical component. Among other program evaluation components, the residents also assessed the organization and output of the program staff and provided recommendations for future training, as well as acquisition and maintenance of medical technology and consumables. In all, over 1 month, the residents were each exposed to over 150 patient encounters and jointly provided over 50 hours of training and mentoring for local eye health personnel.

The residency program – past and future

From its inception in 2019 and until 2023, five residents were trained in this new program. At the time of writing, one or two residents will be following the program during the 2025-26 year. One 2023 graduate transferred into the Master in Public Health Program, to be completed in 2025.

Plans are underway for the former residents, alongside future residents, to return to Senegal in January 2026 for follow-up work relating to PPLC's monitoring and evaluation. Possibilities for future residents to return to Vietnam or Colombia are also being discussed, the latter being dependent on residents' level of ease in Spanish.

Although not required in Canada, application for the accreditation of the program by the ACOE is being considered for the near future.

Conclusion

As the global health community is deploying efforts to eliminate avoidable blindness and visual impairment, optometry institutions have their part to play in training eyecare workers in low- and middle-income countries, a strategy put forward by the WHO and the IAPB. The University of Montreal School of optometry contributes to this with its residency in community eyecare program, which sends out graduate optometrists to low resource settings. With their specific skill set comprised of high-level clinical training, public health course work and experience in various community-based clinical settings, they add to the group of optometrists who can contribute to quality local eyecare training and sustainable avoidable blindness programs.

Figure 1. Click to enlarge

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Features

ASCO News

International Cooperation through the Fulbright Scholars Program

Timothy A. Wingert, OD, Bogdan Mi?kowiak, MD, PhD, Samuel Boadi-Kusi, OD, PhD | *Optometric Education: Volume 50 Number 3 (Summer 2025)*

On September 27, 1945, Senator James William Fulbright, the junior senator from Arkansas, rose to the Senate floor to introduce a bill. This bill would authorize the use of funds from war surplus sales to finance a program “for the promotion of international good will through the exchange of students in the fields of education, culture, and science.” Within 6 weeks, the Senate unanimously approved the law without debate and the House of Representatives followed by doing the same.[1]

Fulbright had already introduced similar resolutions urging international understanding. In early 1945, he had created a bipartisan joint resolution aimed at advocating for American international involvement. The resolution also encouraged participation in an office of international educational exchange. Although the United States had been involved in different educational exchanges after the Boxer Rebellion and World War I, the Second World War would spur the creation and expansion of these innovations. Beginning in 1938, the State Department created a Cultural Relations Division to Latin America in an effort to provide scholarships between universities and undo the influence of fascist states in South America. These sorts of programs were continued in different forms as part of the US occupation of Japan, Germany and Austria. In this vein, Senator Fulbright found World War II to be a watershed moment in pushing for international educational exchanges. Such a devastating war demanded that the nations of the world strive for a “creative peace.”[2] In Fulbright’s view, the aim of educational exchanges were not merely for sharing information. “They are concerned in part with increasing man’s knowledge of science and the arts,” Fulbright would later write, “But they are primarily concerned with increasing man’s understanding of himself and of the national and world societies in which he lives.”[3] Only cultivating this sort of international understanding could invent the “creative peace” Fulbright sought after the World War II.

The initial legislation was passed as amendments to the 1944 Surplus Property Act clarifying a new program that would use the sales of surplus war material. Senator Fulbright introduced a second piece of legislation in November 1945. The Fulbright Act would be passed in 1947 and expanded by the Fulbright-Hays Mutual Educational and Cultural Exchange Act in 1961.[4] In 1948, 65 scholars from the US ventured overseas, but within 20 years, over 82,000 individuals would receive Fulbright fellowships as part of bilateral commissions between the US and 110 countries.[1]

The program has expanded and evolved since its first participants went abroad in 1948, and now provides funds for scholars, professionals, and students to teach and conduct research abroad. Selection for becoming a Fulbright Scholar is highly competitive as the program has a solid reputation for excellence and has been described as “a centerpiece in American engagement around the world.”[5] However, numerous professionals have found it to be a way to enhance their skills while sharing their knowledge with others.

Today, the Fulbright program operates in over 160 countries in every part of the world to promote educational exchanges. The Fulbright program has awarded 400,000 participants with their merit-based grants, and it continues to provide approximately 8,000 grants annually through a number of programs.

These grants are awarded to students, scholars, teachers, and professionals in different specialized programs. The Fulbright US Student Program provides the opportunity for college seniors, graduate students, and young professionals to travel abroad to research topics in their field or teach English. The Fulbright US Scholar Program provides opportunities for faculty, professionals, and artists to research or lecture abroad at foreign institutions for up to a year. Other scholars might pursue the Specialist Program which provides funds for US professionals to consult on curricula or different university planning projects. There are over a dozen other types of scholarship for scholars, students, and professionals within the US and around the world.[6] All of these programs are administered by the United States Department of State's Bureau of Educational and Cultural Affairs. In addition to funding from the US Congress, the individual programs are also subsidized with contributions from the partner country in the specific binational commission. Other funds can come from public and private donations, contributions from partnering universities, or other government agencies like USAID.[7]

These programs also work closely with US embassies in host countries and the binational Fulbright commissions. These commissions work with a board consisting of commissioners both from the US and the participating country. They are the ones responsible for developing programming priorities, fundraising, recruiting Fulbright fellows, and implementing the actual exchanges. In countries where binational commissions have not been formed, the US Embassy for the participating country and its Public Affairs Section work to develop the fundraising and programming for Fulbright fellows instead.[7]

Applicants for a Fulbright fellowship in the US first must reach out to their college, university, or cooperating agency. This group then reviews the application to pass along approved candidates to the Fulbright Commission or US embassy for the country to which they are applying. Individuals applying from outside of the US can apply directly to the binational Fulbright commission or US embassy in their country. The final selection is sent to the J. William Fulbright Foreign Scholarship Board whose board members make the determinations from the lists of recommended candidates. Different grants pursued by applicants will affect the placement of candidates.

The Fulbright program offers professionals the opportunity to teach or conduct research at an institution in another country. For optometrists in the US, the two most likely avenues for participating in the Fulbright program are through a Core Award or a Fulbright Specialist grant. The Core Fulbright awards are for either 4 months or 8 months, while the Fulbright specialist grants usually have a time frame of 2 to 6 weeks. These programs are done through cooperation between the US Fulbright Commission and a Fulbright Commission in the other country. Depending on the country, there may be other programs that are available as well. Many countries, through their Fulbright Commission, also offer opportunities for citizens of their country to come to the US and participate in educational programs or research projects.

An Example of a Core Award

The Core program only allows applications once per year, typically in late summer or early fall. With only 800 of these awarded per year across all countries and disciplines, it is a longer application process and results in an award that may run four months or eight months. In applying for this an individual must determine to which country they wish to apply in advance and describe a project they will undertake. They will also need to submit a CV and a list of references that can verify their ability to undertake the endeavor. After months of review a person is usually notified of their status in November. If the initial review is positive, they will go on to a second phase and another review with individuals from the Fulbright Commission in the host country. After that round of interviews, they will be informed as to whether their project was accepted or not. This grant provides an allowance toward air travel and a modest monthly stipend. The host institution may or may not provide housing for this longer term.

Opportunities for participating in a Fulbright scholar program require a fit between the needs of the host country and institution and the US scholar. There are many countries for which an exchange as an

optometrist may not be possible due to the types of expertise they are prioritizing for their program. It is also beneficial to understand to some degree the scope of practice of the profession and it's fit within the healthcare system in that country. To maximize the experience, the US scholar should have a professional relationship with their counterparts at the host institution.

The US Scholar Experience in the Core Award

In this particular case, both parties first met while attending a World Council of Optometry meeting. Between sessions and at social functions conversations developed around the possibilities of a visiting faculty coming to the institution. As the conversation progressed, we determined that there was good overlap between the topics in the curriculum at the Pozna? University of Medical Sciences that would benefit from the support and expertise of the visiting faculty. Over the course of a week, the plan for a proposal was put together and next steps assigned.

After being notified of the award, plans were made for the experience of being a visiting scholar for an entire semester. Correspondence with the host clarified the responsibilities for the time and discussed the necessities of daily living that would be required to move a US scholar and his family. The Fulbright orientation was a ten-day program which fortunately that year was scheduled to occur in Pozna?, the same city in which we would later be living. Attending this was valuable to not only meet other Fulbright participants but also to gain a better understanding of Polish culture, language, and tradition. As it was in the same city in which we were going to spend time, it was also helpful to gain some perspective on geography and sights within the city. This orientation visit also offered the opportunity to go to the department and meet with the Polish faculty who would become colleagues.

On a regular basis professional responsibilities involved teaching in the clinical procedures lectures and labs, teaching in the case analysis course, and assisting with patient care in the school clinic. There were times over the course of the semester that continuing education lectures were provided to practitioners either through the university or through the professional association related to clinical optometry. These interactions with students and practitioners allowed for building long term professional relationships as well as friendships. Over the years there have been opportunities to return and lecture to the profession as well as opportunities to collaborate on projects from a distance. For the US scholar it demonstrated different approaches to the subject matter and broadened his perspective on optometric education.

The Host Institution Experience

Our first meeting in Orlando during a World Council of Optometry meeting in 2004 not only served to establish our mutual interest concerning the development of Polish optometry but also served to establish a personal rapport. This was the beginning of a friendship and understanding that allowed for ease of cooperation on projects to come.

The Department of Optometry and Biology of Visual System at Karol Marcinkowski University in Pozna? has been cooperating with optometrists and colleges of optometry in the US for over 30 years. Previous exchanges of a few days had taken place between American and Polish optometrists. Lectures by outstanding optometrists such as professors H. Hofstetter, S. Baldwin, G. Lowther or W.C. Maples, as well as considerable financial help from the American side at building the Center of Optometry in Poznan were all great results of that Polish-American cooperation[8].

While there had been short visits from US optometrists over the years, the visit of the US Fulbright scholar was the first long term stay which demanded more involved logistical preparation for living arrangements as well as preparation on how to best integrate him into the academic program. Ongoing conversations to maximize the value of the exchange were conducted and a plan of activities agreed

upon. These included:

- participation in lectures/seminars/labs on optometry for students
- seminars on selected issues/problems in clinical optometry for the optometry faculty in the department
- discussions on the current educational program and its possible modifications; also improvements in the postgraduate program in optometry
- participation in scientific and professional meetings, delivering lectures for The Polish Association of Optometry and Optics
- meeting with authorities of the University (Dean of the Medical Faculty, President of the University)

During the winter semester in Pozna?, the US scholar was able to participate in all of the above activities. An excellent rapport was developed with both the students and faculty in the department. With the visit of the US scholar, we had the opportunity to not only to become acquainted with methods of teaching optometry which were in use in the US but also to benefit from the scholar's erudition. Thanks to this visit and participation in the activities in our optometry department, ongoing scientific and didactic cooperation was established.

The results of discussion on teaching programs for optometrists resulted in a joint poster presentation which took place at World Council of Optometry meeting in London, 2008[9]. Another outcome was the modification of the postgraduate teaching program as was discussed at the World Council of Optometry meeting in Durban, South Africa in 2010[10]. Further expression of that joint cooperation was the scholar's participation in "Optometry 2010" and "Optometry 2011" – international conferences which were organized by our university where the US professor returned to deliver some lectures. There was also a visit to the Department in 2014 to deliver two lectures for students and faculty regarding "The Model of Optometry Practice in the US" and "Screening Methods for Evaluation of Vision Currently Used in the US".

The visit of the US Fulbright scholar in Pozna? was a great success. For his contributions to the development of Polish optometry, the US scholar was honored by the host institution and the Department of Optometry and Biology of the Visual System with the Witelo Medal. Furthermore, it laid the foundations for a future visit at our university in the following academic year by Professor J. Pizzimenti who arrived in Pozna? on a long term WCO Fellowship.

Overall, the Fulbright exchange was of great benefit to the US scholar as well as the host institution. Both were able to learn a great deal from each other and to better understand the approach to the profession of optometry in the two different countries. It also built connections that have thrived for years and resulted in modifications to curriculum and ongoing collaborations. This exchange certainly lived up to Senator Fulbright's dream of "increasing man's understanding of himself and of the national and world societies in which he lives."[3]

An Example of a Fulbright Specialist Award

To participate in the Fulbright Specialist program a person needs to apply and be placed on the Fulbright Specialist panel. In doing so they will be required to complete an application, submit a CV, and have references that can verify their abilities. The application then undergoes review, and if successful, the applicant is notified that they have been put on the Fulbright specialist panel for a 3-year time frame. Once on that panel, the person can then review opportunities to share their expertise with projects in other countries. As there are a wide range of subject areas, it may take some time before a project gets listed that is aligned with a specific area of expertise. Once a person on the panel sees a project that interests them, they may apply through the Fulbright Specialist portal for that specific project. The

application will go through another series of reviews to determine which of the individuals, having expressed an interest in that area, is the best fit. Once a person is selected, individuals from the Fulbright Commission will work with them to ensure their travel arrangements and documents are all in place. The host party will provide lodging. The grant will cover the cost of coach air travel and provide a modest daily salary.

The US Specialist Experience

After being named to the Fulbright specialist panel, opportunities would be reviewed on a regular basis as they became available. One such opportunity was to spend 2 weeks at the University of the Cape Coast in Ghana consulting with their Optometry Department. Before the actual visit, a conference was held remotely to review the expectations of the project and ensure the maximum benefit from the time in country. Background materials were received and reviewed and additional background material that might be relevant was obtained. The Department wanted to bring in someone with an outside perspective to review their curriculum, discuss creating a graduate program, and learn more about optometric education in the United States. With the duration of this program being shorter, the orientation was completed in one half day at the US Embassy in Accra. The Specialist then traveled to the seaside city of Cape Coast.

During the time in Cape Coast, the Specialist participated in activities with faculty and students, presented lectures to the multiple audiences, engaged in a review of the current curriculum and proposals being considered for moving into the future, while he also learned more about the people of Ghana and their culture. He was able to tour the educational facilities, visit off campus and on campus clinical sites, and meet with university officials as well as visit historic sites and nature preserves. This comprehensive experience provided a solid perspective on how optometric education in Ghana compared with that in the US. These interactions led to ongoing collaborations in numerous areas and built ties with optometric organizations in the US as well as leading to a sister school agreement between the University of the Cape Coast and a United States School of Optometry.

The Host Institution Specialist Experience

The Department of Optometry and Vision Science at the University of Cape Coast (UCC) was established in 2002 and runs the 6-year Doctor of Optometry (OD) program. There are currently 11 full time academic staff and of this number, 10 are products of the UCC OD program who have obtained postgraduate training from UK, South Africa, China, Hong Kong and Ghana. There are other part-time and cognate faculty who are not optometrists as well as other optometrists who are based in the clinics who attend to patients and assist in the clinical training of students. Having existed for 2 decades, the department has matured to run postgraduate programs in Clinical Optometry and Vision Science. As a citadel of research in the African subregion, the Department, having applied to the US Embassy to for a Fulbright's specialist with the view of bringing international perspective from the US to our developed curricula, was glad to be connected to the US Specialist by the US Embassy in Ghana. The virtual meetings held in advance of the visit with the scholar enabled us to share our expectations and gauge and contextualize his expectations. Both parties also agreed on a program for the short stay in conjunction with the US Embassy in Ghana. Since this was a short stay, the developed curricula (MSc/MPhil/PhD in Clinical Optometry as well as Vision Science) and the existing OD curriculum were all sent via email to the Specialist for his review prior to arrival in Ghana. The University of Cape Coast as per the agreement, provided accommodation and other logistics such as airport pickup and drop off, internal transportation among others, to ensure a smooth stay in Cape Coast. Our experience with the Specialist was phenomenal as he gave lectures to both students and faculty in the Department as well as the School of Allied Health Sciences which had an external audience from outside optometry. His perspectives on the large similarities between the optometry program (OD) run in Ghana and that of the US was reassuring to the team in Ghana. Similarly, the content of the postgraduate curriculum was at

par to that of international standards and was cleared for accreditation by the relevant regulatory bodies in Ghana. Although the specialist had a short stay, UCC ensured that he visited the great historic sites such as the Cape Coast and Elmina slave castles and the Kakum Rain Forest Canopy walk, among others.

Following the visit by the specialist, there have been several engagements which have led to the reestablishment of the link between the Department and Volunteer Optometric Services to Humanity (VOSH), a new link to Association of Schools and Colleges of Optometry (ASCO) and a formal agreement between the Department in Ghana and another institution in the US. Other faculty in the US have also expressed their desire to lecture in the program in Ghana virtually and provide avenues for virtual learning by students in Ghana particularly in clinical practice. It is expected that the relationship will lead to more Fulbright specialists visiting the Department of Optometry and Vision Science at Cape Coast and lead to further educational exchanges and joint publications.

In each of these cases, the individual conversations between the Fulbright scholar and the faculty, administration, and students in the program are fulfilling for all parties as they learn new approaches and enhance cultural understanding. The recent Summit on Optometric Education showed an interest from all countries for improving the cultural competency of optometrists.[11,] The Fulbright programs offer another avenue for expanding the worldview of the scholar as well as those at the host institution. The Fulbright program currently also offers six different programs for students or professionals to come to the US.[6]

Each of these programs offers professionals the opportunity for career and personal growth which will reward them, their patients, and their profession for years. It also offers the host institution the opportunity to infuse an outside perspective into their program and build bridges that will help them well into the future. The communication between the scholar and the host institution continues beyond the length of the visit as a conversation between friends.

Anyone interested in pursuing a Fulbright Specialist opportunity can obtain more information from World Learning https://worldlearning-community.force.com while more information on the Core Awards and other Fulbright programs can be found at https://us.fulbrightonline.org It is important to verify the needs of the programs and the deadlines well in advance as there are adjustments made to the programs and the process every year. With over 160 countries participating in the Fulbright program, it is important to remember that the requirements for participation vary by country and by project. Some may require proficiency in another language, a specific academic credential, or other considerations.

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Editorial

Optometric Education Globally

Bina Patel, OD, FAAO | Optometric Education: Volume 50 Number 3 (Summer 2025)

Bina Patel, OD, FAAO

Optometry plays a vital role in preventing visual impairment and the landscape of global optometric education continues to evolve.

Over the past 25 years, the number of optometric education programs worldwide has increased significantly. In several countries—such as China, India, the United Kingdom and the United States—the number of institutions providing optometric education has grown. Meanwhile, countries in the Eastern Mediterranean, African and Central American regions have initiated new programs.

The World Council of Optometry (WCO) has been instrumental in supporting the growth and development of optometry. WCO represents our profession globally and maintains official relations with the World Health Organization (WHO). Additionally, WCO is a member of the International Agency for the Prevention of Blindness (IAPB).

Legislation in each country governs the scope of optometric practice. The extent of recognition varies, with some countries either not recognizing the profession or lacking regulatory bodies. Public awareness of the optometrist's role and scope of practice also varies widely.

The length of optometric education programs and the point at which it begins in the education system differ across countries. In most cases, programs start after secondary or high school education. The majority are 3-4 years in length, leading to a bachelor's in optometry degree, while some are 6-year programs culminating in a Doctor of Optometry. Some countries require prerequisite studies emphasizing biomedical sciences prior to entering a postgraduate program, either integrated into the optometry degree or as a separate bachelor's degree.

Launching new programs brings many challenges. These include a shortage of optometric educators, limited equipment in clinical training facilities and issues such as educators not being able to commit full-time due to unsustainable salaries. Often, a small number of faculty members are responsible for

teaching the entire curriculum under conditions where funding is limited.

Educators in certain regions have formed alliances with other organizations to address these challenges, both internationally and within their own countries. Committees have been established to promote resource sharing and address common educational barriers. Faculty exchange programs, continuing education initiatives, shared curriculum materials, and financial and educational support from partner organizations have all contributed to overcoming these obstacles. These efforts are particularly crucial in places the World Bank classifies as low- to middle-income countries.

So how can the profession continue to strengthen its education, research, and produce qualified, high-quality optometrists for the public sector?

The **WCO Competency Framework for Optometry**[1] offers updated guidelines, presenting five pillars of competency for educational programs: refractive error, visual function assessment, ocular health and disease, public health, and professional practice.

Optometric programs should review their current curricula and align them with the WCO Competency Framework. Regardless of how content is presented or delivered—whether through traditional or innovative methods—competency standards should be consistent across all programs within a country and ideally aligned globally. This will support legislative efforts, expand the scope of practice, and improve public understanding that optometrists are the **primary gatekeepers of visual health**.

Various analyses across countries and regions show a clear need to train more optometrists, especially with our vital role in preventing visual impairment and detecting major contributing factors like refractive error. As a profession, are we aware of the **WHO Eye Care Competency Framework**[2] presented in 2022? Are we prepared to meet the SPECS 2030[3] targets set by WHO to address uncorrected refractive error? Are we aligning with the WCO Competency Framework for Optometry? Are we planning effectively to train the next generation of optometrists over the coming decades? And can **artificial intelligence (AI)** help bridge educational gaps?

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