

Article

Community-Engaged Learning Within the Medical Curriculum: Evaluating Learning Outcomes and Implementation Challenges

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Abstract: Community engaged learning (CEL) is a teaching methodology which aims to bridge the gap between academia and society by collaborating on community-based projects. Inspired by theories of experiential learning and social constructivism, CEL celebrates *learning by doing* and is a rather novel teaching methodology within the predominantly theoretical bachelor medical curriculum. Despite CEL's potential benefits, its implementation faces significant challenges. Here, we investigated how students, accustomed to traditional academic teaching, learn during CEL-infused courses, specifically studying student perception of their learning and identifying the various facilitators and barriers to learning during CEL. The study conducted at Utrecht University's Faculty of Medicine included second-year medical students participating in a newly introduced CEL course. Using thematic analysis, the study analyzed students' written reflections collected before and after completion of the course. CEL contributed to developing valuable competencies like empathy, leadership, and communication skills, which go beyond the realm of textbook and classroom-based knowledge. The study further identified key barriers and facilitators, both at personal and organizational levels influencing learning outcome of students. Based on these data, several recommendations have been formulated for all involved parties (students, academic institutions, community partners) which could contribute towards a sustainable embedding of CEL.

Keywords: community-engaged learning; experiential learning; community-academia partnership; service learning



Academic Editor: Hideki Kasuya

Received: 27 December 2024

Revised: 10 February 2025

Accepted: 21 February 2025

Published: 26 February 2025

Citation: Pandit, R.; Essers, R.L.; Pennings, H.J.M. Community-Engaged Learning Within the Medical Curriculum: Evaluating Learning Outcomes and Implementation Challenges. *Int. Med. Educ.* **2025**, *4*, 3. <https://doi.org/10.3390/ime4010003>

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1. Introduction

Community-engaged learning (CEL) is an educational approach that integrates community service with academic instruction [1]. CEL seeks to enhance students' academic learning, civic responsibility, and social understanding through active participation in community-based projects addressing societal needs, thereby contributing to health and welfare within communities [2,3]. In American educational literature, CEL is also known as service learning, as both emphasize academic-social partner collaborations, reciprocity, and reflective practice [4]. In the context of medical education, CEL contributes to the development of several professional competencies by exposing students to real-world environments where they can engage with patients, clients, and other professionals [5].

Through interactions with community members, CEL offers students the valuable opportunity to develop essential (clinical) skills, cultural competence, and social accountability [6]. Within the academic setting, especially within the bachelor medical curriculum, teaching is primarily theoretical and classroom based. Learning here varies from superficial rote learning to developing deeper cognitive frameworks supporting critical thinking [7], but it falls short of providing students with the experience to apply their knowledge into real-world contexts. Interactions between students and the greater community, is limited, if not absent. Learning in CEL goes beyond mastering textbook knowledge and focuses on experiencing and developing one's unique understanding of a topic through interaction with others. It is not surprising that students value CEL-based courses more than traditional lecture-based curricula [8]. Founded on the philosophies of experiential learning and social constructivism, CEL promotes *learning by doing* [9]. It underpins the value of authentic, real-life experience in learning by offering students a rich pallet of experience where previously learnt theoretical concepts could be embodied through reflective practice [6].

The learning environments within the academic setting and CEL differ substantially. While academia offers students a structured and predictable learning environment, the CEL environment might be less structured and uncertain. Additionally, in the CEL environment, students encounter a range of professionals (social workers, support staff, other volunteers) that they typically do not encounter in the academic setting. Interacting with these individuals is essential for students to achieve their learning goals [1]. Next to this, learning here is mostly unsupervised, requiring students to be self-sufficient, which can be particularly stressful when dealing with issues like safety and aggression [10]. These differences in the learning environment might pose a challenge to students who are accustomed to the academic setting and might not fully utilize the CEL opportunity to enrich their learning experience. Despite the potential benefits of CEL, these disparities in learning outcomes pose significant challenges for the sustainable embedding of CEL courses, particularly considering the extensive resources required to develop CEL courses [11].

Interestingly, most of the literature available on CEL within medical education is based on the North American medical education system (>85%) where medical students have completed prior undergraduate training [1]. Moreover, these studies focus mostly on the learning outcomes of CEL. These range from working on interpersonal skills such as communication and teamwork or academic skills such as critical thinking and clinical insights [1]. Also, working towards social justice has been a learning goal in previous research [1]. What remains understudied, and potentially context-dependent, are the factors that facilitate or hinder learning during CEL.

Considering the value of CEL as an emerging teaching methodology within the European context, there is a need to explore the learning process within CEL, prompting the following key question: How effectively can students, accustomed to traditional academic teaching, learn in CEL? Our study aims to explore this question by evaluating the role and impact of CEL on educational effectiveness, with the goal of understanding how to best integrate CEL into medical education. This objective is explored through two sub-questions: (1) What are students' perceptions of their learning within the CEL context, as shaped by their pre-defined learning goals and subsequent experiences? (2) Which factors facilitate and hinder learning during CEL? Answers to these questions will provide beneficial insights for educators, enabling them to refine and optimize CEL initiatives to better align with students' educational needs and aspirations.

2. Method

2.1. Study Setting

The study was conducted at the Faculty of Medicine, Utrecht University, from June 2024 to August 2024. Participants (N = 24) enrolled in a newly introduced elective CEL course, called 'Health in vulnerable patients'. The course was open to second-year bachelor medical students within a six-year medical undergraduate programme.

2.2. Context of the Course

The course integrated academic instruction with community engagement over a 10-week period (Figure 1). Students dedicated 20 h per week, combining theoretical learning with volunteer work at community centres that involved direct interaction with community members (patients/clients).

Sequential order of themes		Examples of topics	Teaching elements	Assessment
1	Cultural Anthropology	immigration, multiculturalism	A. Preparation B. Theoretical Workshops C. Volunteer work D. Peer-coaching, Discussion	Report, Reflection, Presentation
2	Bias	intrinsic bias, privilege		
3	Communication	intercultural communication		
4	Narrative Medicine	understanding patient stories		
5	Public Health	social determinants of health and disease		
6	Social Pharmacology	non-adherence, race and medicines		
7	Community Stories	integration of all themes		

Figure 1. Course structure and content. The course consisted of seven themes and consisted of self-study (A), theoretical lessons and peer-coaching sessions (B and D) and volunteer work (C). Assessment included a written report, reflection, and a final presentation.

During the theoretical classes, students were taught about various relevant topics, which could be non-biomedical (themes 1 to 4) and biomedical (themes 5 and 6) topics. In the final theme, students had to integrate everything they had learnt throughout the course by examining a topic of choice more elaborately. Students first received theoretical courses (workshops, discussions) or practical training (e.g., communication). Second, students were given exercises intended for practice and reflection during their volunteer work. Last, each theme concluded with students submitting their thematic assignments and a reflective discussion. During the reflective discussion, students shared their learning experiences related to the topic.

Every Wednesday, students participated for a minimum of four hours per week in community-based projects for a total duration of eight weeks. These activities were diverse and included assisting in a soup kitchen or helping with organizing daily activities for various target groups (elderly, children, etc.) within the community. As these activities were non-medical in nature and accessible to the public, they offered a low-threshold interactive learning environment. Like most CEL courses [1], reflection was a crucial element of the course. Students were required to journal (1) their reflections on their expectations prior to the course, their experiences during the course, and (2) their thoughts and reflections after

completing the course. Also, at various points during the course, students were asked to submit their reflection journals.

2.3. Study Participants, Procedure and Data Collection

Ethical approval for the study was received from The Dutch Society for Medical Education (NVMO, dossier: ERB 2024.2.4).

Participants: Participants were informed about the study's purpose by R.E. Subsequently, students received an e-mail containing detailed information about the study, including the handling of collected data and an explanation of the consent process. To participate in the study, students had to provide consent digitally. The 24 second-year medical students enrolled in the course were invited to participate in the study; 21 students consented to the use of their reflections for our study. In line with the ethical guidelines for the study, no personal data of the students (e.g., age, gender) were collected.

Design: An explorative, qualitative design was used in this research. Qualitative approaches aim to study how students make meaning of an experience within a given context [12], in this case within the context of a CE-based course. The goal of qualitative research is to promote deeper understanding of a phenomenon and therefore does not claim generalizability [12]. Student reflections before and after the educational intervention (pre- and post-test measurements) were used as data, a commonly employed methodology in educational research [12].

Materials: To answer the research questions, the anonymized written reflections of students were used. Analysis of student reflections was used in previous research [13,14] and led to valuable insights. The questions and the reflections were in Dutch (see Table 1). For the examples used in this article, the reflections have been translated to English. The first set of data was collected in the first week of the course where students had to answer a series of questions at the onset of the course, which asked students about their personal learning goals, reasons for following the course, their personal expectations from the course, and personal concerns. The second set of data was collected in the last week of the course, when students had to reflect on the achievement of their learning goals, on how CEL contributed to their personal and professional goals, and which competencies they intended to carry forward into their future careers.

Table 1. Questions asked at the onset and the completion of the course.

Onset of the Course		Completion of the Course	
1.	In which areas do you want to develop yourself in the near future and how can this course contribute to that?	1.	Have your personal goals been achieved? Describe briefly the goals which have (not) been reached and explain why.
2.	Why have you chosen to follow this course?	2.	In which ways do you think that the CEL experience can contribute to your personal and professional growth in the future?
3.	What are your personal learning goals regarding the CEL environment? In other words, what do you specifically want to learn from the CEL experience?	3.	Which specific knowledge and skills will you carry with you during interactions with patients in the future?
4.	What do you expect from the CEL experience?	4.	How did you handle your concerns during CEL? Could you provide an example?
5.	Which personal concerns do you have about the CEL experience? Are there things you find challenging?	5.	In the CEL setting, how was the collaboration and communication between you and the others?

Data collection: The reflections of students who provided consent for their data to be used anonymously were included in this study. As the course instructor and coordinator, R.P. had access to the reflections, which were anonymized before being shared with R.E. and H.J.M.P. Students were explicitly informed that participation was entirely voluntary and that non-participation would not affect course completion. For assessments, a pass/fail grading system was used. The primary aim of the assessments was to encourage participation and reflection rather than to evaluate subject-specific knowledge. All students successfully completed the course.

2.4. Data Analysis and Interpretation

We used thematic analyses [15,16] to analyze the written reflections, using an inductive approach [17]. Codes were generated based on the data and not using predefined categories, mainly because we wanted to keep a broad and open mind [15], but also because CEL research is limited and no knowledge about hindering and facilitating factors is available in the literature. The analyses were independently carried out by two researchers (R.E. and R.P.). First, data familiarization was accomplished through reading and re-reading transcripts (Step 1) and noting down initial codes (Step 2), searching for themes (Step 3), and reviewing them (Step 4). After the first round of coding, the research team with a third researcher (H.J.M.P.) discussed the codes to systematically organize the initial codes and achieve 100% agreement. Finally, the research team combined the codes and define and name the themes (Appendix A Step 5). The results derived from this analyses was used for the report (Step 6).

3. Results

3.1. Students' Perspectives on Achieving Learning Goals

Based on the various reflections on students' learning goals prior to and post completion of the CEL internship, several unique themes emerged (Figure 2). Students began their internship with learning goals broadly fitting into four themes. At the end of the course, students indicated that most of these initial learning goals were partially or completely achieved. Additionally, two new learning goals were identified: *understanding patient-centred care* and *deepening understanding of the healthcare system*. These latter two themes were not initially identified as learning objectives before the course commenced but were acknowledged by students following course completion as aspects that students had picked up throughout the course and which they intended to carry forward into their future careers.

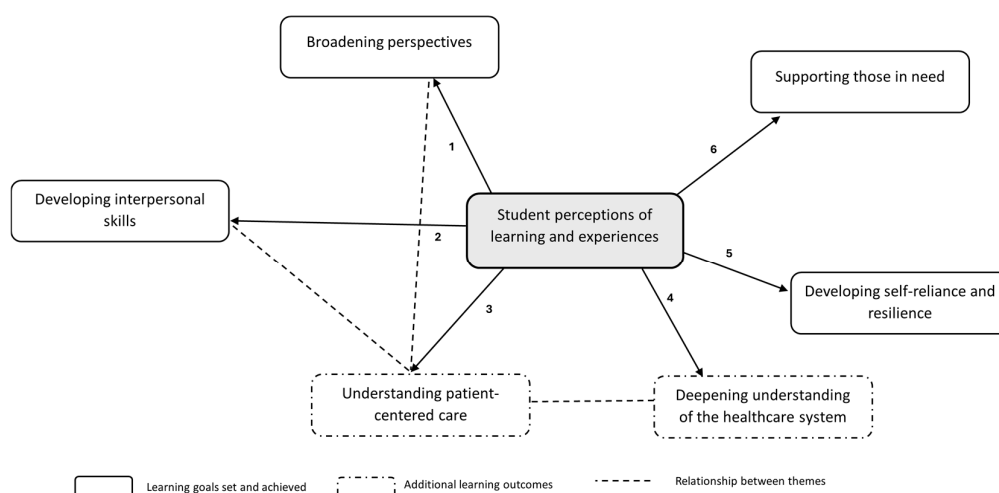


Figure 2. Student perceptions of learning and experiences during CEL: An overview of key emergent themes from students' reflections.

3.1.1. Broadening Perspectives

The theme of broadening perspectives and overcoming assumptions focuses on students' awareness of their own (social) environments, perspectives, and potential biases. Students expressed a desire understand their thought processes and the origins thereof. Students became aware of the homogenous environment they live in and the drawbacks of such environment for health professionals: *"My awareness is about how we live in bubbles, and as doctors, we will encounter people from different bubbles with different perspectives. It is important to bridge the gap between these bubbles so the patient feels understood and the doctor gains insight (J7)"*.

The CEL environment provided students with opportunities to interact with a multi-cultural population. Through reflecting on their thoughts, students examined their beliefs and assumptions more closely. By doing so, not only did students gain awareness of their own prejudices, they also understood the menace of prejudices within healthcare: *"I learnt about various cultures and backgrounds, which opened my mind. I was initially afraid of this group, but I now understand the reasons behind their situations, leading to more empathy. The key achievement for me is learning to eliminate the prejudices they often face (J20)"*. Students additionally mentioned their need to learn about the norms and values of various cultures and how these related to their own norms and values—*"I specifically want to learn how to navigate the norms and values of different cultures (J3)"*—and could in fact achieve this goal: *"I have learnt how important family and neighbours are to people with a Moroccan background. Even with limited resources, they think of helping a sick neighbour in need of soup (J3)"*.

3.1.2. Developing Interpersonal Skills

Students mentioned the importance of conducting meaningful conversations, prioritizing skills such as active listening: *"I have also learnt to listen more and to ask fewer questions (J16)"*. Students also learnt to adapt their conversations to the needs of the target group. *"One of my learning goals was to practice adapting my communication to different population groups and language levels. I noticed that I managed to do this during my internship. However, I also observed that in several conversations, communication didn't always flow well, and we didn't understand each other fully. This gradually improved as the internship progressed. I also put more thought into it and experimented with how communication could still be possible—for instance, by using an interpreter, gestures, words from another language, or even a phone (J18)"*. In this context, maintaining clarity during conversations emerged as a crucial factor for effective communication, and checking understanding was described as very important: *"Some people may say they understand what you've told them, but it's important to respectfully check if the information has been properly communicated (J9)"*.

Students mentioned how conversing about difficult topics became easier: *"I have learnt how to ask difficult questions about personal topics such as family, psychiatric issues, and poverty without those being negatively perceived. This will help me address sensitive subjects during my clinical rotations and build a bond of trust with patients (J14)"*.

Emotions being an important part of communication was recognized as an essential learning goal: *"I would really like to learn more about handling emotions, including understanding others' feelings and keeping my own in check. I think this will come in handy during my internship, especially since I might encounter stories that might be intense (J18)"*.

3.1.3. Understanding Patient-Centred Care

This theme emerged after students had completed their CEL placements, and when specifically asked about knowledge or skills students would be specifically using during their future clinical practice. It was evident that students learnt multiple aspects of patient-

centred care, for example, understanding the patient's perspective and ensuring that treatments and interventions align with the patient's individual circumstances and context: *"For one person, a minor issue with the knee may be no problem at all, while for another, it can completely turn their life upside down (J9)"*. Students realized the importance of socio-economic context while prescribing medications: *"I have learnt that small expenses, which we might overlook, can have significant consequences for someone on a benefits allowance. In the future, I want to be mindful of this when prescribing, and particularly attentive to it during consultations (J11)"*.

Along the same lines, the value of approaching patients holistically by taking one's context into account was observed: *"I learnt that it is important to approach the patient holistically and be aware of their environment and stressors. Throughout this course, I have gained a clearer understanding of how these factors are connected. For instance, poverty can lead to numerous problems and stress (J19)"*. Students mentioned that patients and their complaints should be taken seriously, and timely referral might be essential: *"The symptoms of certain diseases manifest differently in women than in men. Always take your patient seriously, because failing to refer someone can cause significant harm (J11)"*.

Lastly, students expressed the importance of personalized care: *"What I take away from this is that sometimes you have to be satisfied with smaller steps that people take and assess what is achievable for each person individually (J20)"*. This emphasizes the importance of personalized care.

3.1.4. Deepening Understanding of the Healthcare System

The theme of gaining knowledge of the healthcare system emerges as a learning goal that students recognized only after completing the course. Students indicate that their understanding of available healthcare options expanded beyond traditional forms such as general practitioners or hospitals: *"I also learnt that there are many informal care options that a future patient of mine might need (J21)"*.

Students similarly realized the value of local community centres and how they contribute to the wellbeing of individuals: *"Previously, I did not realize how crucial these kinds of organizations are in a neighbourhood and how much they can contribute to a community. I learnt during this course that as a general practitioner, the boundaries are not always within formal healthcare, and you can refer people to such places if they need help (J9)"*.

Students highlighted their learning about various opportunities within existing healthcare systems that could be utilized to promote inclusivity in healthcare: *"What I have learnt is that there is always an interpreter available in the hospital if you have a patient who does not speak Dutch or English (J7)"*. Another student mentioned the following: *"I have learnt a lot about the rules and regulations for undocumented individuals in healthcare. Furthermore, I have witnessed how they, even in such circumstances, manage to stay true to themselves . . . I believe I now have a deeper understanding of their situation and, most importantly, I am better equipped to treat them with honesty and equality (J5)"*.

Finally, the value of preventive care also became evident: *"I have really gained a deeper understanding of the importance of preventive care and education. Many things start at a very young age, so the sooner you address them, the more harm you can avoid in the future (J1)"*.

3.1.5. Developing Self-Reliance and Resilience

The theme of improving personal development and resilience centres on students' aspirations to enhance specific skills during their course, which they perceive as valuable both personally and in their future careers as physicians. Students indicated the need to work on self-confidence, be assertive, and dare to step out of one's comfort zone and were

successful in reaching these learning goals. One student said *“I definitely feel that I am more self-reliant; I performed various tasks and also learnt new ones. I wasn’t afraid to ask questions when I didn’t understand something, so I have definitely overcome that hurdle (J6)”*.

Setting one’s boundaries was another related topic. *“My main goal of the internship is to be able to recognize and assert myself when I feel someone is overstepping my boundaries, as the internship progressed I could set my boundaries better. I also noticed that people appreciated it when I communicated this (J16)”*.

The insight into being satisfied with small achievements was mentioned by a student: *“I learnt that it’s important to be satisfied with the small steps people make and consider what is achievable for everyone. I believe this will be important to recognize as a doctor in the future(J20)”*.

Lastly, the CEL environment provided students with opportunities to work in an environment with other professionals, where they could reflect on how to process feedback. *“Sometimes I find it challenging to deal with feedback. I used to see it as criticism, but I’ve come to understand it as valuable learning points that help you grow. During the internship, I mostly received positive feedback, which boosted my confidence. I embraced the tips I received to improve myself further (J2)”*.

3.1.6. Supporting Those in Need

Prior to starting their CEL placements, students hoped to contribute positively to the wellbeing of the clients and the community: *“I would love to make a meaningful contribution to the neighbourhood and to those who need it (J13)”*. Students had the feeling that they could meet this learning goal and receive the space to do so: *“We helped in many different places and ways at the giveaway shop and also met many different types of people (J9)”*. This was also affirmed by their supervisors: *“I also received feedback from my supervisor that I was very helpful, and I have asked her if I could assist with anything else (J1)”*.

3.2. Anticipated and Experienced Challenges During CEL

Prior to starting their internships, students were asked whether they found certain aspects challenging. Three themes evolved from these reflections. The first three themes relate to the concerns and anxieties described by students before starting the course. Figure 3 highlights these themes.

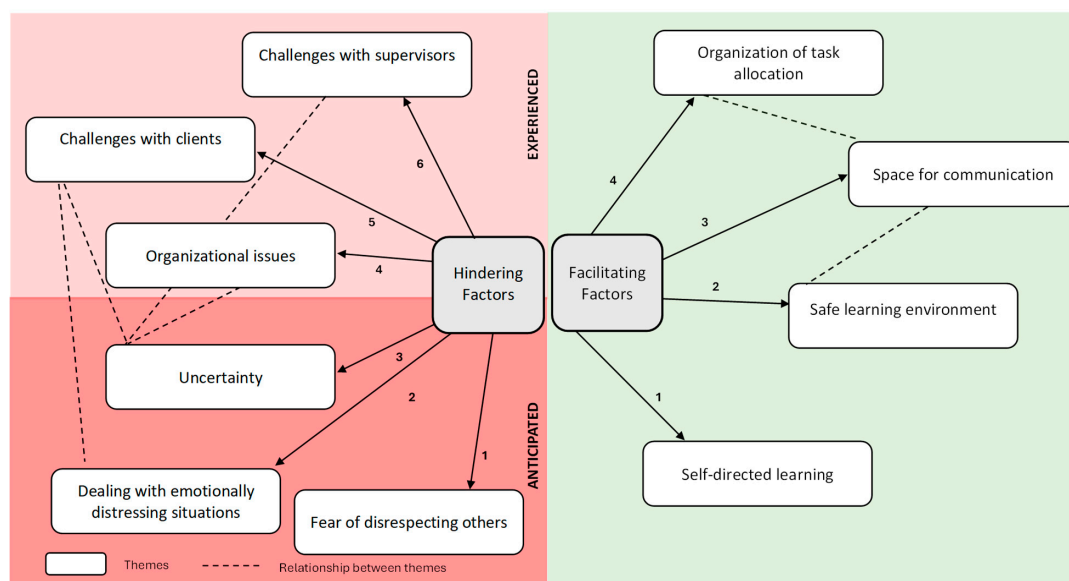


Figure 3. Challenges anticipated and experienced by students and factors facilitating learning during CEL.

3.2.1. Fear of Disrespecting Others

This theme explores students' concerns about unintentionally disrespecting individuals and their behaviours or customs. Many students encounter people from diverse backgrounds during this course and express concerns about how to respond appropriately while becoming aware of their own biases. One student articulated this concern by stating the following: *"I do not have a clear understanding of how to engage with this population; I find it quite daunting, but I am also very curious (J18)"*. This reflects the students' experience of both apprehension and curiosity when engaging with diverse groups. Another student voiced a concern about addressing sensitive issues by noting the following: *"I primarily hope to respect everyone in relation to the shame associated with the food bank (J3)"*. This is a statement highlighting the students' worry about navigating the delicate issue of shame while striving to maintain the clients' dignity. Similarly, another student noted *"I think that people from my target group have been through a lot, and I sometimes find it difficult to ask if they want to share about it without making it too personal for them (J20)"*.

3.2.2. Dealing with Emotionally Distressing Situations

Students indicated their concerns about handling emotionally distressing situations. They anticipated encounters with intense personal stories or clients who may deeply affect them, yet they were uncertain about how to respond effectively and the potential impact it could have on themselves. One student expressed their apprehension about these situations by stating the following: *"I feel that their intense stories will deeply affect me. I am curious about how I will respond to them, knowing that I am likely to be easily affected by them (J18)"*. Students additionally struggled with how to deal with their own privilege in a context where others might be less privileged and their concern about the emotional impact of encountering clients whose experiences starkly contrast with their own: *"I know that I am very fortunate at home, but it could have been different if my circumstances had been otherwise. That seems very confronting to me (J8)"*.

3.2.3. Uncertainty

This theme highlights the uncertainty many students expressed before starting the course. For most, both the volunteer work and the diverse population they will work with were relatively new. This resulted in students not knowing what to expect within CEL. Questions such as what is expected of them, who they would encounter, and what role they should assume arose. Students were apprehensive about interacting with unfamiliar individuals: *"I do find it daunting to find my place, as it remains something new. So, I hope that over time I can get used to a new environment and to the new people (J6)"*. As the social organizations work with a wide range of clients, often from disadvantaged groups within the society, students were concerned about the characteristics of the individuals they would encounter and the nature of their interactions with them: *"I find it a bit stressful because I simply cannot imagine how it will be and what the people I will be dealing with, be like (J21)"*. The feeling of helplessness and not being of much help to their clients was a point of concern: *"I think it would be challenging to cope with the fact that people visiting the community centre are often vulnerable and face issues that I likely cannot resolve for them (J8)"*.

Three additional themes were identified as challenges students anticipated and obstacles students encountered during their volunteer work, leading to them not achieving learning goals in a few cases.

3.2.4. Organizational Issues

Students reported that organizational problems hindered their ability to achieve their learning objectives. These issues included disorganization and a lack of alignment

between assigned tasks and personal learning objectives. For instance, students described experiences as *“very chaotic (J10)”* and noted that *“The tasks (that were) assigned did not align with personal learning objectives(J14)”*. Learning objectives were also not met due to unforeseen circumstances such as a mouse infestation in the community centre, resulting in students performing other back-office tasks. Although alternative tasks were offered, it left students dissatisfied: *“None of my learning goals were actually achieved. . . I find this really unfortunate. I was curious about the Giveaway Bus, but in the end, we didn’t get the chance to ride along with the bus at all. This was because they had issues with mice in the building where they prepared the packages. As a result, for a while, the bus just stayed parked in front of the community centre, where they prepared the packages for people on-site (J10)”*.

3.2.5. Challenges with Clients

Students highlighted issues related to clients or their interactions with them. These challenges included language barriers and difficulties in setting personal boundaries. One student stated the following: *“The intake interviews were conducted in Arabic by our internship supervisors, and we were present, but we couldn’t actually communicate with the people ourselves (J10)”*. Another student noted that *“It could be difficult to set personal boundaries with clients (J3)”*. The fear of facing aggression also kept students pre-occupied at times. *“For instance, the supervisor once mentioned that the man we were about to visit could sometimes be quite aggressive. I found that nerve-wrecking (J17)”*. Such interactions often required students to navigate complex communication and relationship dynamics, which could distract from their ability to fully engage with and benefit from their learning experiences.

3.2.6. Challenges with Supervisors

Students indicated that supervisors sometimes posed obstacles during their internships. Issues included low expectations and unpleasant interactions, which hindered the students’ progress and development. For example, a student remarked, *“I felt that they had somewhat lower expectations of us (J19)”*, which affected their motivation *“But we kept doing our best every time (J19)”*. Even though students did not elaborate on it further, students encountered supervisors who had an unpleasant approach: *“All of us noticed that there were aspects of our internship supervisors’ approach that we found unpleasant (J7)”*. These supervisory challenges impacted students’ motivation and their ability to effectively achieve their learning objectives.

3.3. Facilitating Aspects of CEL in Achieving Learning Goals

This last section discusses the themes identified by students as supportive in overcoming anticipated challenges and achieving their learning objectives. The first theme focuses on actions students can take to adopt a teachable attitude. The subsequent themes primarily address facilitating factors within the organization where they work.

3.3.1. Self-Directed Learning

The first theme, self-directive learning, centres on the actions students can take to maximize the educational value of their CEL experience. Students reported in their reflections that adopting a proactive attitude and actively engaging in their learning process were crucial for their success during the course. A student mentioned *“I wasn’t afraid to ask questions when I didn’t understand something”*, highlighting the importance of addressing uncertainties. Another student reflected *“I eagerly embraced the tips I received to improve myself (J6)”*, emphasizing the value of being receptive to constructive criticism. Students also voiced their wish to help with other tasks when their learning goals were not met: *“Sometimes I felt that I was assigned physical tasks that didn’t have much to do with my internship goals. After discussing it, things always worked out. This taught me to communicate effectively*

(J14)". Students reflected on what they had learnt about their biases and presumptions, which helped them to navigate challenges: *"On the first day of the internship, I tried to interact with everyone as neutrally as possible and set aside any potential biases I might have about people who go to the Food Bank. Overall, everyone was very kind, and you could have a pleasant conversation with them about the day and the weather (J3)"*.

3.3.2. Safe Learning Environment

The second theme, safe learning environment, underscores the importance of a secure and supportive atmosphere in the workplace. Students emphasized that helpful team members and engaged supervisors made them feel welcome. This sense of security was essential in achieving their learning objectives, as it allowed them the freedom to actively engage in their tasks and responsibilities. One student shared *"The internship went very well; the supervisors were all very involved, and I could really ask anything (J17)"*, highlighting the importance of engaged and approachable supervisors. The informal atmosphere of the organizations helped students settle down: *"I was quite nervous beforehand about starting at a new internship. However, as soon as I arrived, this feeling completely disappeared. I could easily chat with the other volunteers and instantly got along well with them (J4)"*. Students had the feeling that they could be their authentic selves: *"My concern quickly disappeared because everyone was very kind and curious about me, and I was able to have conversations about things like my faith, which was very nice (J6)"*. The presence of another student also contributed to the feeling of safety: *"Looking back, I was glad that I did the internship together with (a course mate), because it made me feel a bit more confident (J4)"*.

3.3.3. Space for Communication

The third theme, engaging in conversations within the CEL environment, focuses on the space and support students receive during their CEL placements. Conversations with other volunteers, supervisors, or fellow students not only helped students to perform their tasks aptly, but they also stimulated students to reflect and process potentially challenging situations they had encountered. One student shared *"I learnt a lot about this (situation); the volunteers at the community room could talk about it extensively (J8)"*, highlighting the value of knowledge exchange with experienced individuals. Another student mentioned *"The first time, I asked the other volunteers how it worked, and after that, it went smoothly without (the need for) further consultation (J3)"*, illustrating how these conversations provided clarity and confidence in their tasks. These experiences underscore the importance of interpersonal communication and knowledge exchange within the learning context, helping students understand their tasks better and gain insights into different perspectives and approaches. In fact, a series of support possibilities were named by students who had the need to share and reflect on their experiences: *"If something was bothering me, I discussed it either with a fellow student, the internship supervisor, or during the peer-coaching session (at the university) (J8)"*.

3.3.4. Organization of Task Allocation

The final theme addresses the supportive role of clear task allocation in the internship setting. When students have a clear understanding of their responsibilities, they are better prepared and can engage more effectively in their own learning process: *"There was also room to indicate if you preferred to do something else that better matched your learning goals (J18)"*. This highlights the importance of flexibility in aligning tasks with individual learning objectives. A similar kind of autonomy was noted by another student: *"I felt comfortable expressing my willingness to contribute more. I was also given the chance to do so, particularly by specifying the times I preferred to help, allowing me to experience everything (J1)"*. Structured allocation offered students clarity: *"Every afternoon, the task allocation for the day was written on a large whiteboard (J3)"*. Students also valued being equally and fairly treated by other

volunteers: “We had a group chat where we shared our questions and announcements, and we distributed tasks fairly among ourselves whenever they came up (J21)”. Discussing task allocation not only clarifies expectations but also encourages students to actively communicate their preferences, empowering them to take ownership of their learning journey and contribute meaningfully to their internship experience.

4. Discussion

In the continuum of experiential learning, early exposure to the ‘real world’ is essential to gradually prepare healthcare professionals for their future tasks [18]. It is evident that CEL is an excellent medium to do this as it stimulates the development of multiple and diverse competencies necessary for the medical profession. These learning goals and outcomes went beyond textbook-based knowledge and aligned with the CanMEDS competencies [19], thereby preparing students to address the complexities within the healthcare system. Our study further shows that the effectiveness of learning during CEL comes from the dynamic interplay between students’ autonomous motivation and a multitude of external factors, which can either enhance or hinder learning.

Through the process of social interaction, students constructed their unique view of the world based on their previous experiences and triggered by real-world problems, thus embracing the spirit of social constructivism.

4.1. Learning Outcomes in CEL

Bias, discrimination, and racism remain pressing issues within healthcare [20,21] and are often left undiscussed [22,23] within the medical curriculum. Exposure to the CEL context provides students with the opportunity to interact with community members and enable them to understand themselves, and thereby their own biases. This insight becomes even more relevant when the student population is relatively homogeneous and represents a dominant culture and higher socioeconomic status [24].

Understanding their *own* biases and broadening their perspectives of *others* subsequently paved the way to comprehending the concept of holistic patient care. In a predominantly theoretical bachelor’s medical curriculum, students often adopt a disease-centric and monodisciplinary approach to patients, which can lead to an incomplete understanding of the broader picture [25]. Students began to see patients beyond their ailments and more as unique fellow human beings. This acknowledgment is known to be conducive towards patient–doctor relationships [25]. Resultingly, physicians can overlook the patients and their needs (*care*) and focus rather on the treating the disease (*cure*) [26]. Next to this, students gained insight into the various formal and informal facets of the healthcare system. These actions can be relatively straightforward, such as engaging a translator—an approach known to positively impact the quality of patient care [27]—or recognizing the value of community centres in promoting wellbeing [28]. With the current generation of students poised to work with an ageing, diverse, and expanding population [29], becoming familiar with these informal healthcare options is essential. Besides contributing to mental wellbeing, community centres act as vital links between patients and healthcare systems by educating patients and facilitating communication between physicians and their patients [28].

Lastly, students utilized the CEL experience to develop a wide variety of interpersonal and communication skills. The CEL setting has interesting parallels to clinical clerkships. In both situations, students leave the familiarity of the classrooms and step into another context, which might be unpredictable and chaotic, with professions who they have not worked with closely. Clinical clerkships are in fact known to be a challenging and stressful transition for students [30]. Interestingly, the interpersonal and communication-related

learning outcomes of students described here align with those that students require during clinical clerkships [30]. Our study confirms that CEL could aptly offer a low-threshold, non-clinical environment helping students develop skills necessary to navigate their clerkships. It has been shown that when CEL preceded clinical clerkships, students were more adept in certain skills during their clerkships [31].

Comparing our findings with those of reviews on the learning outcomes associated with CEL [6,32] reveals notable similarities but also adds new insights. Both studies highlight outcomes such as enhanced teamwork and communication skills, increased compassion for diversity, greater self-confidence, and a better understanding of public health determinants and policies. However, our study also identifies additional outcomes not emphasized in Stewart and Wubben's review [6], such as the enhancement of self-awareness and reflective practices, and the development of a holistic approach to patient care. These insights expand on existing research, emphasizing the broader impact of CEL on student development.

4.2. Supportive and Hindering Factors in Students' CEL Experiences

Although literature exists on learning within a clinical context, interchangeably known as work-based learning [12], learning during CEL, which involves both a classroom-based theoretical part and practical work within the community, has not been extensively researched. Like other learning contexts, learning within CEL is influenced by a multitude of factors, and these factors could be both facilitating or hindering and internal or external.

Supportive factors for learning within CEL involved the students themselves, particularly the cultivation of a pro-active attitude by engaging proactively with the learning environment, but external factors also played a crucial role. A safe learning environment, space for communication, and the clear organization of tasks were identified as external elements affecting learning. Although these factors may seem "given", they also form the foundation of various learning frameworks such as Maslow's hierarchy of needs [12] and Vygotsky's zone of proximal development [12], which emphasize the importance of a supportive environment for personal and intellectual growth. For example, Maslow recognizes the sense of safety and security, love and belonging, and self-esteem as essential elements for realizing one's purpose and actualizing them [12]. Similarly, a crucial concept of Vygotsky's theory of social constructivism is the zone of proximal development, a range within which a learner can progress beyond their current capabilities by engaging with others in their surroundings [12]. Students understood the need for self-directed learning, but also engaged with their surrounding through communication, especially with more experienced individuals (supervisors in this case) to challenge themselves and expand their boundaries. Furthermore, students successfully managed to make their learning goals personal, making each CEL journey unique and demonstrating that providing students the opportunity to design their own learning journey enhances their intrinsic motivation and drives them to achieve their learning goals, even in unfamiliar contexts. This idea aligns with Ryan and Deci's well-regarded Self-Determination Theory, where a sense of competence, autonomy, and relatedness are essential aspects driving students towards autonomous motivation for a given task [33,34]. In our case, the opportunity to formulate and work on their individual learning goals (*autonomy*) and to reflect and perceive what one has achieved (*competence*), within a safe and supporting environment (*relatedness*), could have positively contributed to student learning. Alternatively, the fact students chose this specific course with the wish to make a difference could also have contributed to the feeling of relatedness and the autonomous motivation.

Prior to commencing the course, students expressed concerns related to personal challenges. These included uncertainties about their own reactions to emotionally distressing

situations and fears of inadvertently showing disrespect to others. These apprehensions reflect anxiety about personal adequacy and cultural sensitivity, which are often encountered in the context of working with diverse populations [35]. This could be even more relevant for a relatively culturally homogeneous group of students, as the majority of medical students in our university belong to the dominant cultural group and are usually from a higher socioeconomic class [24]. Additionally, prior discussion of key elements governing intercultural communication, such as ethnocentrism, stereotyping, privilege, and racism [36], might have made students aware of their positionality and contributed to this anxiety [29]. In the same vein, the fear of encountering emotionally distressing situations, along with the uncertainty about what the CEL placements entail, affect the feeling of safety negatively. However, upon completing the course, students identified that the practical hindrances they encountered were largely external. Organizational issues and misalignment between assigned tasks and personal learning objectives posed significant barriers. Additionally, challenges with supervisors and clients, including language barriers and low expectations, were highlighted as substantial obstacles. These findings indicate a shift in perceived barriers from internal concerns to external, systemic issues, suggesting that organizational and supervisory structures need to be addressed to enhance the overall efficacy of the CEL experience. This shift from internal concerns to external, systemic issues is likely connected to the self-critical nature and self-doubt prevalent [37]. This lack of resilience and high self-criticism may cause them to first identify personal shortcomings as barriers to success, before recognizing more systemic or external factors as constraints. The question that arises here is to what extent should these challenges be addressed when redesigning courses? A medical professional encounters both routine and uncertain (clinical) situations [38]. Therefore, the incidental exposure of students to uncertain and varied situations involving the element of struggle would in fact assist students in developing an adaptive approach (also called *adaptive expertise*) to addressing problems later in their careers [39].

4.3. Strengths and Limitations

The strengths of this study lie in its detailed approach, characterized by multiple iterations of reading, coding, and re-evaluating themes to ensure consensus. One of the strengths of the study was the richness of information obtained through the analysis of written reflections at two different time-points. As these reflections were integrated into the course itself, students were not burdened with additional tasks, likely contributing to the high participation rate of 88%. This is especially important while designing studies, as burdening students in an already overfull curriculum will negatively affect student wellbeing [40,41].

Nevertheless, the study also has its limitations. Since this is an elective course on a very specific topic, there might be a selection bias due to the attraction of students who specifically chose this course based on their pre-existing interest in the topic, which could have influenced the results. The obtainment of consent for sharing reflection reports might have affected the authenticity of student reflections, a phenomenon which cannot be excluded entirely, not only for the current research but for other types of qualitative research as well. The fact that reflections were anonymized prior to analysis could have positively affected the authenticity. It is important to note that there are various schools of thought when it comes to the concept of the ideal number of study subjects. While the sample size of 21 might seem low on the one hand, the rich reflections provided sufficient data for thematic analysis [42,43]. Furthermore, as the pioneers of thematic analysis, Braun and Clark, note, the use of *social constructivism* as a lens also means that an ideal sample size and data saturation does not exist as the meaning of a dataset is derived through interaction between the data and the researcher's context and own perspectives [43]. Finally, a possibility which

may require future research is that the effects studied here were short-term effects of CEL; we do not know if these realizations and insights would be implemented into practice. Although the theory of planned behaviour considers *intention* as a strong predictor of *behavioural change* [44], in the future, it would be interesting to look at whether students actually incorporate their knowledge and skills during clinical practice, first during their clerkships and later during independent practice. Interviews with students, but also other stakeholders, and observations on the work floor could be helpful tools for this purpose.

4.4. Reflexivity

The researchers engaged in an iterative process of analysis and discussions; however, subjectivity remains in qualitative research [45], and the researcher is seen as a storyteller conveying the voice of the researched using their own cultural and scholarly perspective [45–47]. This implies, especially from the perspective of social constructivism, that meanings of the text shall contain a degree of subjectivity and interpretations cannot be simply ‘excavated’ from the data [16,43]. We have tried to remain as open to alternative interpretations as possible. Furthermore, as reflections of students could be influenced by grading, to encourage ‘honest’ reflection instead of ‘ideal’ reflection, students were free to decide whether they wanted to participate in the study and reflections were not graded. Additionally, as the depth of reflection can be influenced by various internal and external factors [48], no distinctions were made regarding the level of reflection in this study.

4.5. Implications for Practice

For practical recommendations, a triadic approach is suggested.

Firstly, for academia, it is crucial to prepare students thoroughly by setting clear expectations and ensuring that instructors are approachable for any questions students may have. Additionally, the university should ensure that internship placements are suitable and align with the learning objectives. Maintaining regular contact with supervisors at these sites and providing them with instructions regarding the desired guidance and support is essential to foster a cohesive and supportive learning environment.

Secondly, for community partners, it is essential to create an open learning environment in which students feel safe and supported. The team should be both supportive and engaged, with supervisors actively involved in the process. Additionally, it is important to establish and communicate clear expectations with both the university and the students to ensure mutual understanding of the anticipated roles and responsibilities.

Lastly, for students, it is necessary to adopt a proactive attitude, communicate effectively with the workplace, and maintain an open attitude toward new learning objectives. This proactive engagement will enhance their learning experience and ensure they maximize the opportunities available during their placement.

5. Conclusions

The study demonstrates that the community-engaged learning (CEL) course significantly contributed to students’ personal and professional growth, highlighting the importance of experiential learning in preparing students for clinical clerkships and beyond. CEL provides an ideal balance to embodying key competencies within medical education by bridging the gap between theoretical knowledge and practical application [44]. Our study further identified key challenges faced by students during CEL internships and measures that could be taken by teachers to better prepare students and organizations in order to maximize learning outcomes. However, certain limitations, such as the variability in individual experiences and potential biases in self-reported reflections, should be considered when interpreting the results. Future research could explore the long-term impact of CEL

internships on students' career trajectories and examine how different support mechanisms influence their experiences.

Author Contributions: Conceptualization R.P. and H.J.M.P.; methodology R.P. and H.J.M.P.; formal analysis R.L.E., R.P. and H.J.M.P.; resources R.L.E. and H.J.M.P.; writing—original draft preparation R.L.E. and R.P.; writing—review and editing R.P. and H.J.M.P.; supervision H.J.M.P. All authors have read and agreed to the published version of the manuscript.

Funding: Part of the study has been financed by the Higher Education Research grant (HER), awarded by Utrecht University. No grant number has been allotted for this grant.

Institutional Review Board Statement: Based on the information provided by the researcher, the NVMO Ethical Review Board concludes that it is competent to review this project. Based on responses given to the questions and review of the supporting documents, no further ethical review is necessary. The board therefore approves the study.

Informed Consent Statement: Not applicable. Our survey received approval from the Dutch Association for Medical Education Ethical Review Board. Participation was entirely voluntary and anonymous, with no collection of identifying information.

Data Availability Statement: The research data are not publicly available.

Conflicts of Interest: The authors do not have any conflicts of interest to declare.

Appendix A. Themes and Sub-Themes Used in Figures 2 and 3

Themes and Subthemes of Figure 2: Student perceptions of learning and experiences during CEL: An overview of key emergent themes from students' reflections.

1	Broadening Perspective
1.1	Awareness of own positionality
1.2	Awareness of own bias
1.3	Cultivating an open attitude for others
1.4	Understanding other cultures
2	Developing Interpersonal skills
2.1	Active listening
2.2	Adapting conversation to needs of the listener
2.3	Conversing about difficult topics
2.4	Dealing with emotions during conversations
3	Understanding Patient-centered Care
3.1	Understanding patient perspectives
3.2	Approaching patients holistically
3.3	Making the patient feel heard
3.4	Individualized care
4	Deepening Understanding the Healthcare System
4.1	Gaining knowledge of informal healthcare options
4.2	Insight into the functioning of volunteer organizations
4.3	Insight into the importance of prevention
5	Self-reliance and Self-reliance
5.1	Developing self-confidence
5.2	Setting boundaries
5.3	Contentment with achievements
5.4	Feeling of preparedness for unknown situations
6	Supporting those in Need

Themes and Subthemes of Figure 3: Challenges anticipated and experienced by students and factors facilitating learning during CEL.

Hindering Factors		
Anticipated	1	Fear of Disrespecting Others
	1.1	Respecting client's dignity
	1.2	One's own attitude towards other cultures
	1.3	Asking questions that are too personal
	2	Dealing with Emotionally Distressing Situations
	2.1	Listening to intense stories
	2.2	Dealing with aggression, and problems with drugs or alcohol
	3	Uncertainty
	3.1	Making contact with people from a different environment
	3.2	Not knowing what to expect
	3.3	Not being able to solve problems of others
	3.4	Not being taken seriously
Experienced	4	Organizational Issues
	4.1	Mismatch between CEL tasks and learning goals
	4.2	Problems with logistics
	5	Challenges with Clients
	5.1	Clients spoke another language
	5.2	Unable to set boundaries with clients
	6	Challenges with Supervisors
	6.1	Low expectations of supervisors
	6.2	Unpleasant way of communication
Facilitating Factors		
	1	Self-directed Learning
	1.1	Daring to ask questions
	1.2	Setting one's boundaries
	1.3	Self-reflection
	2	Safe Learning Environment
	2.1	Engaged and approachable supervisors
	2.2	Informal atmosphere
	2.3	Space to be authentic self
	2.4	Sharing the space with another student
	3	Space for Communication
	3.1	Conversations with other volunteers, supervisors, or fellow students
	4	Organization of Task Allocation
	4.1	Clear and fair task allocation
	4.2	Flexibility in timings
	4.3	Diversity in tasks
	4.4	Team meetings

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