



How do medical students develop the self-awareness as social entities during the longitudinal communication experience with citizens?

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ABSTRACT

Objective: Diverse interactions with local citizens are known to broaden the health perspectives of medical students, stimulating their motivation to learn, and improving their communication skills. In recent years, the rapid decrease in birth rates and the transition toward a nuclear family structure have posed a challenge for medical students in Japan, given their lack of experience in communicating with citizens who are older than they are or whose social backgrounds differ from their own. We aim at exploring how a longitudinal interaction with citizens can develop medical students' communication skills and understanding of themselves as social entities. **Method:** Thematic analysis was used to analyze descriptive comments submitted to an e-portfolio by 100 first-year medical students who participated in longitudinal community-based experiential learning for six weeks with one of three different kinds of citizens such as the elderly, pregnant mothers, or nursery school children in 2011. Five independent researchers extracted themes from comments collected from 45 individual students on each six weekly encounters. The remaining data were used to confirm data saturation. **Results:** Two different themes emerged from the analysis: 1) understanding of citizen's centeredness in communication, and 2) understanding of human relationship and expansion of world as a social existence. The first theme contained three different stages: i) survival, ii) trial and error, and iii) shifting gaze. The second theme contained four different stages: i) narrow, self-centered worlds, ii) awareness of the citizen's existence, iii) understanding the worlds of the citizens and expanding their views of life, and iv) self-realization as a social entity within an expanded worldview. These two themes became progressively deeper through the longitudinal and mutual interaction. **Conclusion:** The longitudinal, mutual communication experiences with citizens has an impact on the students' development of self-awareness as social entities accompanied with improving their communication skills.

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INTRODUCTION

Developing a social identity is an important goal in behavioral science education [1]. Social identity refers to the combination of views of us such as age, ethnicity, race, religion, gender, nationality and socioeconomic status. Understanding a social identity is crucial to all health professionals since misunderstandings and miscommunication are more likely to occur when interacting with people from different identity groups [2]. In fact, many reports on the outcomes of medical doctors declare the acquisition of such understanding is essential [3, 4]. Nevertheless, educational programs in behavioral science in medical schools continues to be regarded, as "nice to know," and rarely regarded as "need to know" [5]. As a result, educational programs for behavioral science are being subjected to pressure, as well as basic science, because of the perception that there is "no space" for the introduction of new aspects of knowledge [5]. Given the increasing volume of knowledge in the expanding field of clinical medicine, undergraduate medical curricula tend to emphasize the early introduction of clinical education. Introducing effective behavioral science education poses a long-standing yet pressing problem.

Multiple studies have addressed the effectiveness of experiential learning in early stages of medical training. They have been shown to increase motivation to learn among medical students. [6]. Similarly, early experiential learning has proven effective in several areas, including improving communication skills through interaction with patients, engendering confidence, and reducing stress. [7]. In the field of public health, it has been reported that longitudinal contacts with elderly people promotes an understanding of community health problems, in addition to deepening the attitude of understanding towards the elderly [8]. Furthermore, early experiential learning that involves interaction between medical students and pregnant women have been reported to improve the students' understanding of pregnancy, in addition to promoting and understanding of the importance of providing family-centered medical treatment [9]. Students possess both positive and negative emotion in the hospital and nursing home after a 4 week clinical nursing attachment [10].

However, the majority of such longitudinal initiatives have been implemented in clinical contexts, based on conventional physician-patient relationships. Whilst there is a wealth of literature on the learning programs based on

behavioral science aimed at encouraging communication with local citizens, few explored how students become aware of a person in society [7]. Furthermore few such educational interventions had been conducted with pregnant women or infants in nursery school.

Since 2008, we conducted a longitudinal community-based experiential learning with citizens for first-year medical students at Gifu University for a two months period. The program was designed not only to promote communication skills in non-clinical context between medical students and citizens such as elderly people, pregnant mothers, and nursery school children whom students would not normally encounter, but also to facilitate students' understanding a social identity. By using an e-portfolio, students' learning and reflection were deepened by experiential learning with supportive feedback from their instructors.

The objectives of this study are to explore (1) Japanese students' learning ways that lead to the acquisition of communication skills and (2) the processes how they develop the understanding of the self within society, during longitudinal community-based learning experience with citizens in non-clinical settings. This study may add an important finding on the process of developing a social identity in East Asia, where new generations of students are entering medical school with extremely limited levels of social experience. This may also be true in other countries where six-year medical programs are implemented, in which students enroll immediately upon completing secondary school.

METHODS

Operational term definitions

The elderly, pregnant mothers and nursery school children who were participants in this educational program are defined as "the participant-citizens" rather than patients. Since this educational placement was taken in the local area and students were expected to interact as citizens, allowing them to communicate easily in a context different from the medical context. The word "the participants" in this paper refers to the medical students who participated in this program since they are the central focus and the participants of this study.

Educational Interventions

Experiential learning was conducted every Thursday morning over a period of eight weeks, with individual shifts lasting three hours each. The setting and the participant-citizens were 1) at a senior housing facility with elderly but healthy people, 2) at a maternity clinic with pregnant mothers, and 3) at two separate nursery schools with children. Students were assigned to these placement they desired in advance. One to three students were matched with the same citizen for six weeks to communicate with. Learning strategies during middle 6 weeks consisted of six steps; 1) discussing the day's plans for approximately

30 min (beginning with the second session, accompanied by reflection based on an e-portfolio feedback from the previous session), 2) the participant-citizens encounters for approximately 90 min, 3) group-based reflection and discussion for approximately 30 min, 4) personal reflection through e-portfolio entries at school or at home, and 5) feedback from instructors. As for sequence of the program, briefing and debriefing sessions (three hours each) were provided before and after the middle six weeks of the encounter with the participant-citizens. At least one instructor supervises students encounter in each setting (about 30 students). In general, one to four students make pairs to interact with the participant-citizens in every experiential learning session.

Participants and Data Collection

Data were drawn from the descriptive comments entered into an e-portfolio system by a hundred first-year medical students from across three kinds of facilities who participated in this longitudinal community-based experiential learning in 2011. Six hundred reports (100 students x 6 times) were retrieved in total from the e-portfolio system. The average age of the year-1 students of Gifu University School of medicine was 22.4 years old, with a gender ratio of one woman to four men.

Methodology and Data Analysis

A qualitative approach was deemed appropriate for performing a detailed analysis of the participants' expressions of their feelings, thoughts, and subtle emotional conflict and exploring the cognitive-emotional processes associated with such learning experiences. Thematic analysis [11] was conducted to analyze the medical students' text in an e-portfolio by hand. The reflective comments were collected on six occasions from groups of 15 medical students dispatched to each facility (45 students in total). The comments were subsequently analyzed, coded, and subjected to thematic extraction by five independent researchers, who agreed a final outcome. The remaining students' comments were used to establish data saturation. The most impressive comments (quotation) in each category were provided in the results. To help readers recognize the characteristics of the raw data, the participants were identified by a unique ID that includes a gender (M=male, F=female), the student's number in this paper, and the characteristics of the participant-citizens (Eld=the elderly, Preg= Pregnant mothers, Chi=Children). For example, "Male 1 with Preg" means a male student who were coded as 1 and interacted with the pregnant mother during the session.

Ethical Considerations

The study was conducted with the approval of the Investigational Review Board and Ethical Committee of Gifu University Graduate School of Medicine. Informed consent was obtained from the students after explaining

the purpose of the research. There was no penalty for any student who declined to participate in this study.

RESULTS

Thematic analysis was conducted to explore (1) Japanese students' learning ways that lead to the acquisition of communication skills and (2) the processes how they develop the understanding of the self within society. As far as we retrieved, this is the first study that demonstrates how medical students develop their social identity during longitudinal community-based learning experience with citizens in non-clinical setting.

Two themes were extracted through the qualitative analysis of medical students' e-portfolio comments (figure1). The first concept "understanding of citizen's centrality in communication" contained three different themes: i) survival, ii) trial and error, and iii) shifting gaze. These stages reflect the shift in centrality from the students to the participant-citizens. And second concept "understanding of connectedness and expansion of world as a social existence." contained four different themes: i) narrow, privately centered worlds, ii) awareness of the citizen's existence, iii) understanding the worlds of the citizens and the expansion of worldview, and iv) self-realization as a social entity within an expanded worldview. These two concepts were constructed with influencing to each other.

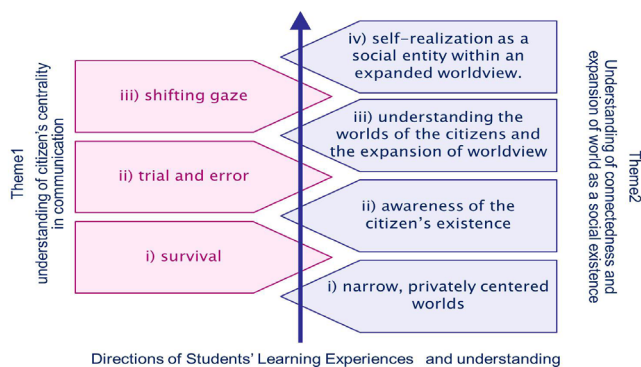


Figure 1. Two Themes emerged from the thematic analysis and their relationship

1) Understanding of citizen's centrality in communication

Survival

From the analysis at the start of the program, students were conscious of their awkwardness during conversation and communication. In addition, they admitted that they suffered from severe anxiety and nervousness because of insufficient skills and a dearth of ideas.

"I am bad at conversing, so I am more than a little tense, since I have to avoid negative facial expressions while taking care not to hurt the feelings of those I am dealing with" (Male 1 with Preg).

"I have never played with children before, so before the

training, I was worried that it would be difficult" (Male 1 with Chi).

"At first, I was bewildered and could not think of any common topics to talk about" (Male 1 with Eld).

At the beginning of the practice, the students' central concern was to make full use of their skills and the plans that had been discussed between the peer students. However, in the end, the students confronted various difficulties while interacting when things did not go as expected.

"Right after I introduced myself, I dived into a serious conversation about pregnancy, so I suspect the pregnant mothers saw me as being somewhat stiff" (Male 2 with Preg).

"Since we were still facing mutual tension, our conversation didn't really go anywhere, and it felt very stilted. There were a few extended silences when I exhausted the questions that I'd prepared beforehand, and couldn't think of the next question" (Male 3 with Preg).

"Today was the first day of our practice, and I was completely unable to have any conversation with this kid in the nursery. Not only that, she shied away when I tried to hold her hand or give her a hug, she wouldn't look me in the eye, and she burst out crying when the nursery teacher who was there as a go-between left the two of us alone in the room. I had the sense that, for a first day, today really did not go very well" (Male 2 with Chi).

"Frankly speaking, I did nothing during my first practice other than listen to the elderly's story. I was really anxious about the fact that I had been hardly able to find anything to say. Nevertheless, it seems that the most important aspect here is not so much to communicate well as it is not to communicate poorly" (Male 2 with Eld).

Trial and Error

Having come through the survival period, the students began to display varying degrees of confidence in their interactions with the participant-citizens and undertake various strategies to achieve positive communication. They experienced minor successes and occasional failures in their attempts to assert control over communication on their own.

"I thought I would ask the pregnant mother to speak seriously about the illness, but ... I couldn't elicit anything. If it doesn't seem like there is anything forthcoming, it's not good to ask too much, so this time I tried to keep things in balance" (Male 4 with Preg).

"I didn't prepare enough topics for conversation. I don't think the silences were so bad, but there were a lot of meaningless silences this time, for whatever reason" (Male 5 with Preg).

"Holding hands went surprising smoothly this time, even though I wasn't able to do it at all last time. I felt so happy being able to go for a stroll together like that" (Male 2 with Chi).

"Compared to the beginning, with regard to holding hands

and talking together, I feel like the kid has really opened up to me. Nevertheless, maybe because there is some still embarrassment, I don't get much response when I start chatting with her, and she won't meet my gaze when she talks to me. It didn't take us long to get used to this point, but I suspect it's going to be difficult to move forward from here" (Male 2 with Chi).

"The kid consistently refuses to visit the washroom or have a snack, but he was eating candy when I was away for a little while. This time, I was struck by a feeling of frustration and sadness" (Male 3 with Chi).

"I'd planned for us to talk about our philosophies of life and death, but then we started talking about something else. It was great that the conversation really took off although the topic was not something I'd like to talk about" (Male 3 with Eld).

"For a while at first, when I looked at the elderly, he didn't really look in my direction. I wonder why that was. Was my facial expression too severe? I remember during the training before this practice, when we were dealing with simulated patients, they told the colleague that he has a nice smile on his face, so I decided to face them with the corners of my mouth turned up. Perhaps because I had actively tried to elicit conversation, he gradually began to look in my direction" (Male 4 with Eld).

Shifting Gaze

As communication deepened, students gradually progressed from an egocentric worldview, in which they had attempted to control interactions by asserting their own skills, toward developing a deeper understanding of the ways in which the participant-citizens viewed the world.

"Because I didn't really talk to the kid very much, I felt that he might have thought that I was not so interested in him. But, even though he was often sharing glances with other kids, I sensed that, once I affected a stance of ignorance and asked a question, they would turn to me and begin talking to me earnestly" (Male 4 with Chi).

"Recalling the first episode of my practice, I was shocked, not understanding why I was being ignored, even when I tried to start a conversation. The truth, however, was that they were just shy" (Male 5 with Chi).

"The elderly had no children due to infertility, but when I saw her smiling at and cradling babies in the elevator, her demeanor made me think that she might wish she would have had children" (Male 1 with Eld).

"When he talks about his life now, or about his or his wife's illness, his voice grows somewhat quieter. This sort of thing helps you understand what someone likes and dislikes talking about. It will be a helpful insight in the future" (Male 1 with Eld).

"The elderly said that when she dies, she'd like to go suddenly. I could totally understand where she was coming from, since I have painful memories of seeing my own grandfather lying

bedridden for seven years before dying of dementia" (Male 3 with Eld).

Understanding of connectedness and expansion of world as a social existence

Narrow, Self-centered Worlds

Until the first day of the program, the medical students had held an egocentric and narrow worldview in which they were the principal characters. Other characters who were concerned with these worlds might have at the most included their family members and friends. This worldview in no way incorporated the presence of their participant-citizens. The students occasionally became preoccupied with abstract descriptions, as with reports of anecdotes that they had solicited about incidents affecting other people.

Despite instructions to describe particular details of the incidents they had experienced, the students entered no comments that reflected any transfer of emotion consistent with the context.

"To be able to make yourself understood, it is desirable to be conversant in a wide variety of topics of conversation, with an abundant store of the requisite knowledge. The same applies when your participant-citizens are able to understand your words. By building up experience, you become able to see things from a variety of perspectives and grow into an educated person. Communication might be the best tool for helping you to grow up to be wise, independent, and well-educated. I want to keep this in mind as I continue my work" (Male 7 with Preg).

Conversely, some of the descriptions entered by students consisted of narrow enumerations of the facts that they had heard, without any interpretation of the context.

"The elderly says he was born in Manchuria and withdrew to Japan after the war. I did not hear how many siblings he had, but it seems it was common at the time for families to have six or seven children. He says that his father founded a logistics company, and that his wife inherited it. I think it is evident that he has had an economically prosperous life, and that he is currently trying to lead an active life, filling his time by running some kind of errand every day. He appears to be physically healthy and enjoying a fulfilled, post-retirement old age" (Male 5 with Eld).

With regard to family-related questions that they raised as their own learning tasks, some students reacted in a self-centered fashion, expressing that the questions were irrelevant to their participant-citizens.

"The elderly with whom I was paired didn't have any children, so it was a shame that I couldn't ask them any sort of questions about their children or grandchildren" (Male 1 with Eld).

While the students did acknowledge the perspectives of their participant-citizens, they did not share their worldviews or transcend the boundaries of their own worldviews. As

a result, they observed and analyzed their participant-citizens from an excessively objective standpoint.

“Death seems to be a topic of particular interest for elderly people. I felt like they talked about it quite seriously” (Male 3 with Eld).

“Even though it was time to listen to the teacher, they wouldn't, and I couldn't make these spoiled kids listen to their teacher. In other words, you could say that I failed to ‘manage’ or ‘control’ the children. The kids would also occasionally mutter something indistinct to me, and the fact that I couldn't decipher it was a barrier to proper communication” (Male 6 with Chi).

Awareness of citizen's existence

During the practice, the students had the unfamiliar experience of encountering pregnant mothers, children, and the elderly people. These groups consisted of people who were likely to be alien to the egocentric worldviews that the students had held before the practice. Dialog with these participant-citizens gave students their first opportunity to develop a palpable perception of the existence of these others, in addition to becoming palpably aware of the reality of their own lives and ways of living. In other words, the students were able to gain a clearer perception of the existence of others in their own lives (e.g., children, pregnant mothers, the elderly people, the recently deceased, the unborn, and others related by marriage).

“It appears that the unborn baby has recently been moving around inside, and she feels it pushing against her internal organs. For example, she feels the urge to urinate even when she has just gone to the toilet. There's nothing in life comparable to this sensation for us men, so it was a valuable experience to hear about it directly” (Male 8 with preg).

“It's her first pregnancy, and I was really struck by how much she took comfort in things like being sent vegetables and meals from time to time by her mother-in-law, who lives close by, and receiving advice from her own mother over the telephone” (Female 9 with Preg).

“Even though it's been only six visits, at some point I started feeling like a mother does. In such a short time, I've been able to feel great fondness for this child, as though I've come to think of her as my own child. I wondered if I could have found her any cuter, any more lovable, or any more important if she had been my own” (Female 7 with Chi).

Understanding the worlds of the citizens and the expansion of worldview

The students turned their thoughts toward the feelings of people they had become newly aware of through their exchanges, as well as the feelings of those who had originally existed within their own worldviews. Their thoughts began to demonstrate an emotive transition as they gained an understanding of their respective relationships (e.g., those between families).

“It's quite a difficult matter to think about life with reference to the elderly who have no children. I thought that the only thing you could say was that some aspects of their lifestyles are completely different from those of families with children. I think that's why relationships are so strong between couples who are forever alone with each other. This elderly also mentioned certain things in passing during our conversation, like his views of life and death and the difficulty of dying and leaving his wife behind. This made me realize that he had a lot on his mind” (Male 1 with Eld).

As their worldviews expanded, the students began to self-project.

“We're still just finding our feet in the world, at the border between childhood and adulthood. We are transitioning from a cared-for generation of kids like these kindergarteners we've been getting to know to a generation that cares for them. While there are some substantive differences, we probably act childishly ourselves sometimes, without noticing the trouble that we are causing to those around us” (Male 8 with Chi).

Self-realization as a social entity within an expanded worldview

As the medical students relived past episodes through ongoing, simultaneous interactions with the participant-citizens, they began to “share the lives” of the participant-citizens. From living within an egocentric view of society, they began to perceive themselves as social entities, living among various others, supporting and being supported in turn by each other.

Furthermore, the medical students began to accept others as constituent elements of their own worldviews and engage in further examination of their own existence from the perspective of others' worldviews. Within these expanded worldviews, they were able to rethink their own images of the life cycle.

“I heard that some of the pregnant women saw in us (medical students) a future vision of their own children. Although they are still children now, I pictured them, decades from now, as medical students like me, and wondered if I'd be working as a doctor in the halls of medicine by then. I feel like this gave me an inkling of the overall view of the life cycle” (Female 10 with preg).

“For the first time, I felt a type of closeness with birth as a major life event. I felt kind of moved—it was a really strange feeling. When I think that this is something we all go through, being born one by one from our mothers' bodies ... it's so obvious, but then I realized how amazing it is. When you think about life, you get the image of a single line traced out for each person. But it's not like that, I think. Rather, you go along, you get married, you have kids—it's something much more haphazard and messy” (Female 11 with Preg).

“If you think about the life cycle literally, picturing life as a giant circle, there is a point on that circle where we were born, and once we've gone around and come back to the same spot, we die. When I think about what this signifies from a

religious point of view, I think of reincarnation. But thinking about it more generally, I feel that it means that our own lives are supported by the lives of those who have gone before us. I felt this most keenly when I started looking at the children in light of our being here now, after countless turns of this cycle" (Male 9 with Chi).

The medical students understood that their own selves were also positioned as social entities within this life cycle. As their thoughts were turned to the joys, transience, and effective limitations of this reality, the students were led to consider the inner workings of society itself.

"I understand that raising children is different from the experiences that we've had together during the program. Even so, my practice has made me feel more strongly that I'd like to become a mother in future. I am sure that it would be extremely tough to practice medicine and raise a family at the same time. Some people do manage to pull it off, however, and I dream of having a wonderful household, so I want to make it a reality" (Female 7 with Chi).

"Having to go on living, facing the sadness and pain of life after the death of a spouse or child, has a profound impact. We typically consider living a long, healthy life as a good thing, but under those conditions, there are cases where we can't necessarily describe such a life as happy. In this sense, I guess it's like the saying that good fortune is intertwined with bad, and that there's no such thing as a life entirely without woe" (Male 5 with Eld).

"It's a marvel to think that, about 20 years ago, I was also like this—the size of a pea and unable to string a sentence together. On the other hand, when I think that when I become a father, these little ones will be the age I am now, I get a sense of the mystery of human development and the passage of time (aside from the question of whether 20 years a long is or a short time). Some of my friends are already parents, but they seem to know what they're doing, unlike the likes of me, who are still flunkies depending on our parents. All living things share the process of having children and becoming parents, growing old, and dying. But having children also has social implications. In addition, I feel that the opportunity to be involved with these infants, on the cusp of our comparatively long life cycle, is a life experience that has helped me to find a new sense of values" (Male 10 with Chi).

DISCUSSION

We identified the themes of other-centric understanding and a deepened awareness of the self as a social entity. To our knowledge, this study of Japanese medical students participating in an early practice-based experience program is one of the few studies that focus on the development of self-awareness and transformative perceptions of the individual's place in society, along with the associated acquisition of communication skills.

Several structural features of the practical training program are noteworthy. In conventional, one-off, early, practice-based experience programs, it is relatively easy to produce

a passing reaction (e.g., "Okay, got it") for students who are able to withstand the exercise. In contrast, the ongoing involvement with the participant-citizens over six occasions in this program created an environment in which the students had to think deliberately about how to begin their exchanges, how to continue and develop them, and how to confront their conclusions. Learning strategies ensuring that the students had indeed deepened their awareness were characterized with ongoing exchanges with their citizens, peer discussions for each session, self-reflection while preparing their e-portfolio entries, and discussions with instructors. The previous study investigated self-awareness over a two-day training course in nursing, it was possible to drive development over the continuous course of six sessions [9]. In training programs that are limited to a single session, as suggested by student comments during the survival period, students have a tendency to think that as long as they do not cause any trouble, it is sufficient simply to obtain a passable impression from their participant-citizens. However, in too many cases, this merely instills an egocentric style of communication, as observed during the introductory period. Through ongoing interaction occurring over six sessions, the students developed a desire to maintain and cultivate a favorable impression that would carry over to the next session, thus becoming more actively involved in their exchanges. In single-session exchanges, the anecdotes and experiences that students heard through their interactions with the participant-citizens could be understood only as general or superficial, factual anecdotes (e.g., "That's what happened"). However, after passing through a trial-and-error phase of communication through exchanges spread over six sessions in the context of their participant-citizens' worlds, the students were able to experience such incidents vicariously by attaching a deeper reality to them. This learning outcome cannot be realized within conventional, one-off, practice-based experience programs. It was achieved precisely because of the ongoing exchanges employed here. These results strongly suggest the significance of ongoing, practice-based training.

Furthermore, the practice-based training conducted on this occasion was aimed at two learning objectives: communications training and behavioral scientific research. That the two themes of this study (i.e., the centrality of the client to communication and understanding the expansiveness and connectedness of social existence) grew progressively more profound through mutual influence was an important discovery in itself. For example, in communication training, instructors are advised to use simulated patients for role-playing in hospital settings. In such settings, which are likely to have been decontextualized from society, medical students participate in learning as legitimate members of the medical system, thereby training the participant-citizens (who play the role of patients in the same context) in communication as medical students within the framework of a medical interview. In this case, the practice-based training was implemented in the social context of a community comprising fellow citizens. However, in this context, absolute strangers (identified only

as “medical students”) were partnered with the participant-citizens from different contexts, thereby becoming fellow inhabitants. This procedure created a learning environment in which the medical students could become familiar with the lives and lifestyles of these others. It was precisely this environment that allowed a deeper understanding of the theme of social existence. Nevertheless, this result does not mean that an understanding of the second theme (i.e., understanding the expansiveness and connectedness of social existence”) can be strengthened merely through face-to-face contact with fellow community residents. It would be difficult to foster such understanding without cultivating communication skills through the continuous accumulation of trial-and-error communication with the same participant-citizens. Moreover, the cultivation of such communication skills and the consideration of life history, lifestyle, and family connections in the participant-citizens' backgrounds allowed the students to draw further connections between communication and this participant-citizens-centered experience.

Before conducting this study, we were also unaware of the nature of the locus of control [12] that promotes the deepening of self-awareness among medical students. In general, it is considerably important to understand the concept of locus control as an attitude for effective patient support. Medical students have an immature capacity for objective self-awareness. In other words, their worldviews are subjective and egocentric. Although “dominance” may be suggested as a quality that is characteristic of medical students [13], the fact that the participants in this study were initially unable to communicate effectively suggests that the awareness of medical students retains the potential to undergo change as they progress toward understanding the importance of “the centrality of the participant-citizens.” By viewing the lives of others, the students developed parts of themselves of which they had previously been unaware. Particularly in Japan, where the nuclear family is becoming the norm, it could be useful for medical students to undergo a “second-person” style of simulated experience reflecting the diversity of the members who make up society. By deepening their interactions and reflections even further and learning to see their counterparts within the contexts of family and society, students can become aware that they themselves are also supported within these contexts. In addition, the development of the concept of self could help students to deal with self-criticism. The ability to regard and accept one's self objectively is even more important for assertive individuals because constructive assertions and acceptance of criticism are basic qualities that also contribute to interdisciplinary collaboration and daily medical treatment [14].

Whereas medical education tends to accentuate the relative importance of the “biological” element of the Bio Psycho-social model [15], our practice-based training program emphasized the understanding of the person, the family, and the community. In this way, we explored how the systematic acquisition of communication skills had

a spiraling influence on that understanding. The ability to think about things from others' perspectives could consequently enable a shift in perspective with regard to the understanding and treatment of families under medical care. Context-based adult learning is an brand new learning approach [16]. For training involving interaction with the elderly, this might entail such activities as strolling together along a walking course or spending time at home, thus being in the participant-citizens' life-world. In other words, experiencing life at the same pace at which it is lived by another can foster an understanding of how the other sees the world. For pregnant mothers, witnessing the fetal ultrasound image during a check-up (i.e., a world shared by student and patient) could be an experience that traces the participant-citizens' world. With young children, important tasks might involve minding and caring for children in the nursery. Such activities might also emphasize consciousness of being in control. To increase the effectiveness of these experiences, it is important for students to experience events as they occur in the context of the participant-citizens' world (e.g., visiting with parents, the experience of being admitted into care). The most important point in this regard is not early *clinical* exposure (i.e., exposure to a world in which the student is likely to be in a position of dominance), but rather a temporary decontextualization [17] from medicine. Such decontextualization could be considered indispensable as practical training for secondary students in East Asian countries and elsewhere, who are likely to lack social experience after having jumped through the hoops of an unforgiving examination system.

Learning through interaction with children is another new finding that had never been addressed in related literature. In contrast to visible attempts to overcome indications of egocentrism in communications with pregnant mothers and the elderly people, an opposite phenomenon was apparent toward nursery children. In these contexts, students displayed an overly strong awareness that they were trying to adapt to the children, thus becoming overly other-centered (e.g., taking too much notice) and demonstrating a tendency toward unnecessary involvement that often impaired relationships[18]. Pampering had an adverse effect on the children's development of self-concept. For example, undesirable actions (e.g., taking turns in playing with the children and being overly solicitous to selfish behavior) were perceived as such in retrospect. In the same way, the students recalled having tried to address such situations by controlling (i.e., disciplining) the children. However, in many cases, such strategies led to mistakes, causing the students to experience sadness and frustration, and thus teaching them to appreciate the skills of early childhood educators. On the other hand, the students experienced true joy when they perceived that they were forming relationships. For example, small victories (e.g., having a child hold their hand or hug them) were perceived as joyful experiences of vicarious parenthood. It is interesting to note that at the end of the program, several students were more keenly conscious of “separation” than they were of questions regarding how to summarize their

findings. The students' loneliness and sadness of being forgotten by the participant-citizens was probably more characteristic of the children, who were openly expressive of their feelings. Whereas adult participant-citizens were able to share their sadness at the end of the exchange, some students suggested that the parting should not be drawn out in cases involving children who could not understand the parting.

The generalizability of this study is subject to several limitations. As a qualitative study performed within a single university in Japan, how far the results are likely to be reflected as a global trend is open to speculation. Nevertheless, because the study explored fundamental aspects relating to processes of understanding the individual in society, many of the findings may be considered as having hidden potential applicability. In addition, it is not necessary that such learning of awareness can always be achieved in six weeks, given differences between medical students in terms of learning stage and readiness. Furthermore, although a writing ability might have affected the quality of the e-portfolio, e-portfolio as an assessment should be regarded as a drive for students' learning. Nevertheless, comparison of a portion of the data from the participants in our study to the comments of other participating students demonstrated a certain level of data saturation. This suggests that the concepts based on the results are generic to some extent.

In conclusion, through the experience of ongoing exchanges with various community citizens and various interactions with the participant-citizens, medical students developed communication skills and deepened their perceptions of themselves as social beings. The processes identified in our findings portray the struggle of contemporary medical students to learn how to communicate. As such, they can contribute to improving the quality of future early, practice-based experience programs and behavioral science education.

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