



Dental students' reflections on their fieldwork experiences

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Abstract

Objective: The purpose of this study was to explore the learning outcomes of the fifth and sixth-year dental students from their community-based education experiences as documented in the self-reflection essays.

Materials and Methods: Fifth-year and sixth-year dental students were assigned to submit a written reflection after their 2-week and 4-week fieldwork experience. The fieldworks were organized every year in Nakhon Ratchasima province for 5th-year students, and five provinces in Northern Thailand for 6th-year students as a part of the dental curriculum at Faculty of Dentistry, Mahidol University. Content analysis was used to analyze the student's learning from their reflections. Investigators read essays independently to identify the learning outcome from 5th and 6th year student's reflection. The categories were coded by discussing among the investigators, and then each category was emerged to themes.

Results: A total of 116 fifth-year students and 105 sixth-year students from the 2013 academic year were included in this study. Five major themes were identified similarly for both fifth-and sixth-year students. They were communication and interpersonal skills, personal and professional development, translate theory into practice, social awareness and commitment to services.

Conclusions: According to students' reflections, the fieldwork experience affected their attitudes and perspectives. It also enhanced a sense of profession and enabled them to appreciate the important role of the dentist in a community.

Keywords: self-reflection, community-based, education, dental students, fieldwork, experience

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Introduction

The concept of reflection has been used widely in health science professions as a vital component of curriculum and practice for a lifelong learning¹. While there is no unified definition of reflection, it is mostly described as a thinking process as activated by experience or practice². Boyd and Fales³, and Sanders⁴ proposed that reflective thinking had to link with self (e.g. my action and my thought) and should include a view of the change or self improvement. Mezirow⁵ also described reflection as an important step in transformative learning. Reflection has been demonstrated in many studies to improve student humanism and professionalism in medical students⁶⁻⁸.

In dental education, the literature regarding the use of reflection has been growing during the past 20 years⁹. The nature of dental curriculum largely involves laboratory and clinical experience to measuring clinical and hand skills. However, the competency such as critical thinking skills, self-directed learning, ethical considerations and social responsibility as described in 21st century skills are difficult to evaluate. Self reflections were reported as a tool to demonstrate those skills^{10, 11}. Mofidi et al.¹² reported on dental students' reflection on their community-based experiences. Students were interviewed about the incident by describing their feelings or opinions about what they achieved or how things could be done differently¹². Recently, the impact of reflective assignments also found related with student's improvement in cultural competence and diversity awareness¹³.

Another study showed how the community-based learning impacts on students' attitudes and perceptions through the use of self-assessment process¹⁴. The results showed that the students' attitudes improved significantly between the beginning and the

end of the evaluation after being a health care provider in the community. Moreover, it was found that the volunteering in the community experiences tended to affect more on the female students than males that related to the career choice and personal ability.

Recently, Chaiprasitti et al.¹⁵ conducted a study in Thailand about dental students' reflection on Community-Based Health Promotion Course. The results found that students mostly reported their development in personal and professional growth, followed by widening the perspective of life and self-exploration. However, the understanding of health promotion turned out to be the topic students least mentioned about.

In Thailand, dental students are required to submit a written self-reflection for the dental licensure as a part of the clinical examination of community dentistry discipline since 2010. As a result, dental students were required to write their reflection during their oral health promotion project and submit their project report. In our 6-year-program of dentistry at Faculty of Dentistry, Mahidol University, students were provided with fieldwork experiences in the rural areas during their 5th and 6th year to enhance students' understanding of community dentistry. The fieldworks aim to develop students both personally and professionally and be responsible for social and communities. During the field works, the students were evaluated by supervisors on sites, who were dentists in the district hospitals, and also be evaluated by their presentation after the completion of field works. In addition, all students must submit a written self-reflection as a part of their learning evaluation.

Although the dental students at Faculty of Dentistry, Mahidol University wrote the self-reflection during the past few years, what students learned and how they learned during their fieldworks have never been explored.

This study aimed to explore the learning outcomes and development among 5th and 6th year dental students from the fieldwork experience through their written self-reflections.

Method

Study population

We studied the 5th and 6th year Mahidol dental students who went to Nakhon Ratchasima and northern regions (including Chiang-rai, Lampang, Phayao, Phrae, and Nan provinces), for their field works respectively. Total of 116 fifth year students and 105 sixth year students from the 2013 academic year were included in this study.

Community-based education at Faculty of Dentistry, Mahidol University

The 2-week and 4-week field works were mandatory for 5th year and 6th year dental students at Mahidol University. Since all dental graduates had signed the contract to work in the rural community for three years after their graduation, the community-based education was necessary to prepare them to work effectively and independently in Thai health system. During the first semester of the 5th year, dental students studied the health delivery system in Nakhon Ratchasima, which comprised of staying in the community with the villagers for five days and staying in the local hospital for nine days. The aims of the 2-week field works in the 5th year were to develop community diagnosis skills and to learn the health system and public health administration at sub-district to provincial levels.

For the 6th year students, the sites for field works located in Northern Thailand including Chiang-rai, Lampang, Phayao, Phrae, and Nan provinces. About 4-5 dental students were assigned in a group to stay in a district hospital and work in a community for four weeks. The

aims of the 4-week field work were to develop student's planning, implementing and evaluating oral health promotion skills. Each group of students required to present their community project in a seminar and share their experiences after finishing the field work. In addition, this course also aimed to provide students the direct experiences to work with other health care providers and local members in the community.

Written narrative reflection

At the end of the field works, both 5th and 6th-year students were required to write a self-reflection about what they had learned and what they felt during the field work. Students were emphasized that their self-reflection had no score, and there was no judgment about right or wrong on their writing.

Data analysis

We used qualitative content analysis¹⁶, which was oriented towards summarizing, coding, categorizing and interpreting data. We analyzed the 5th year separately from the 6th year students' papers because they were not in the same field of experiences and perceptions. To protect confidentiality and decrease readers' prejudice, no identifiable information was attached to the essay.

Since the authors knew the process and objectives of the fieldwork that may affect preconception, we do bracketing by using four trained students (two students for the 5th year and other two students for 6th year analysis), who did not experience and involve with this fieldwork to help sorting and coding. Each student read independently through the entire essay to receive general information and overall perspective. Next, the investigators inspected the comprehensive content of data and sentences to ensure the meaning of coding. After sorting, the codes were categorized into groups, and the investigators discussed with

the trained students to sort and revise the categories again. The categories were then emerged to major themes according to their relevance. As a result, the team had a list of major themes and categories from all of the students' self-reflection papers.

Result

A total of 116 self-reflections were collected from 5th-year dental students (74 were females, and 42 were males), and 105 self-reflections were collected from 6th-year dental students (65 were females and 40 were males)

A typical writing mentioned many issues of learning in community-based experience in one paper. The learning outcomes were categorizing to five major themes, listed in table 1.

Theme 1: Communication and interpersonal skills

1.1 Listen and accept other's opinion

Students stated that living with their friends made them learn to listen and accept their friend's opinion. They also improved how to communicate with patients to deliver them

the best care. Students wrote,

"There are many skills I gain. For example, communication, negotiations, questioning, refusing and developing relationships."

The sixth year students also mentioned that understanding and accepting each other was the important part of living together in a peaceful way.

"In reality, we cannot choose what will occur or we cannot choose who we will work with. The best thing we can do is to adapt ourselves, accept things, and try to look at a good behavior instead of the bad one. Also living with others, we shouldn't judge anyone before we come to know that person well."

1.2 Work as a team

Working as a team was another skill mentioned in self-reflection writings. Students got opportunities to work closely with their peers. They planned, shared, respected and listened to opinions of each others. In that instance, students gained courteousness, compassion, and exchanging views to live happily with their friends. The following excerpt captures this point.

Table 1 Themes and categories extracted from student's self-reflections

Themes and categories	Number of essays (%)	
	Fifth year	Sixth year
1 : Communication and interpersonal skills	59 (50.9%)	32 (30.5%)
1.1 Listen and accept other's opinion	14 (12.1%)	11 (10.5%)
1.2 Work as a team	52 (44.8%)	27 (25.7%)
2 : Personal and professional development	94 (81.0%)	78(74.3%)
2.1 Learn new life skills and adaptation	42 (36.2%)	24 (22.9%)
2.2 Self responsibility and self improvement	16 (13.8%)	3 (2.9%)
2.3 Problem solving skill	63 (54.3%)	35 (33.3%)
2.4 Broaden perspectives	23 (19.8%)	29 (24.8%)
3 : Translate theory into practice	27 (23.3%)	60 (57.1%)
4 : Social awareness	106 (91.4%)	58 (55.3%)
4.1 Understanding people's beliefs and lifestyles	84 (72.4%)	43 (40.9%)
4.2 Understanding the complexity of health system	83 (71.6%)	18 (17.1%)
5 : Commitment to service	18 (15.5%)	26(24.8%)
5.1 The need for changes in community	3 (2.6%)	10 (9.5%)
5.2 Life Goal	16 (13.8%)	19 (13.3%)

"Working together as a team, we had disagreements. But after discussing opinions and shared our works, we can get the work done well."

Respect is an essential thing for teamwork."

Students also learned about working with other professional. While observing hospital works, students realized the importance of dental nurse and learned to work as a team with them.

"I got to know the dental nurse who previously I did not know their roles before. As a dentist, we should not insult them because they relieve our works. We have to live together and depend on each other."

In order to manage their sixth-year project, students had the responsibility in different kinds of work according to their ability. They sometimes needed a hand from other professionals to organize the project smoothly and effectively.

"We learned how to work with other people not only our friends, but also the dental nurse, public health officers, teachers, village health volunteers, and community leaders. It made us realize how importance of member's contribution to project effectiveness."

Theme 2: Personal and professional development

2.1 Learn new life skills and adaptation

Students mentioned that during their time in the community, they had a chance to do things they had never done before, and adapted themselves to people in the community. They learned some new skills such as cooking and climbing trees.

"Before coming here, I imagined the place being difficult with low-income people and poor hygiene. But it was only my thought. I put myself as standard and based on it. Actually they did not need anything more than what it is, and they were truly satisfied with what

they have. This idea made me feel satisfied and learned to adapt to a variety of place. I did cooking and gardening. It gave me self-esteem."

Spending time with local people gave students an opportunity to live a simple life, unlike living in the city, such as sleeping in mosquito net with a fan.

"People's lives in the rural are simple. They slept in mosquito net with a fan. When I was in that atmosphere, it made me feel differently comfortable. I can sleep without air conditioner. I also have simple meals yet full of nutrition."

However, 6th-year students tended to mention about how they were adjusting their behavior and attitude toward local people in the community.

"Adapting myself to local people meant I had to reduce my strong belief. Thinking that I am in a higher social status preventing me from fitting in and living happily in the community"

Many sixth year students concerned that learning local language was highly important. Some local people only used their language that sometimes led to the misunderstanding between dental students and local people.

"Some staff didn't use common language during the training that we couldn't understand the meaning. For example, Keaw-Saw means wisdom teeth."

"We learn Lahu language in order to communicate with local people correctly."

2.2 Self responsibility and self-improvement

Students also realized that dentists were very important in the community. Their knowledge and experience in school would provide the highest benefit to their patients as many as possible. The community-based experience made students aware of the importance of learning and realized that their knowledge was not enough.

"I was always told that skills can be

practiced, but more important than skill is knowledge that we should take as much as possible during school life."

"I put the resolution of my last two years in dental school. I realized the importance of gaining more knowledge and experiences with the intention to help people get better dental health."

Sixth-year students were assigned to manage the project by themselves. Since it was the first time, they faced many difficulties from their narrow vision and bashfulness such as the silent facilitator who couldn't promote the conversation in the meeting. Therefore, they improved themselves to seek knowledge.

"We should not act as a glass that full of water, but we should be open up and ready for new knowledge."

2.3 Problem-solving skill

The projects of sixth-year students had many hard situations, as sometimes they could not control external factors. So problem-solving skill is very important for those who run the project.

"Dental units were insufficient, broke down and not fully worked. We just need to learn to use what we have or substitute with other things."

"The meeting couldn't get started because the caregivers did not show up on time. So we put those who were late into the separated room, and let the punctual group started first. Even though this wasn't right on plan, it was the best thing we could do at that time to make activity go smoothly."

2.4 Broaden perspectives

Discussing with many people and spending time alone helped broaden their perspective. They started to realize the essential of learning community dentistry.

"Every place has its own characteristics. We must remember not to prejudge them. If we want to improve ourselves, we need to understand

others, not only ourselves. Sincerity and learning are the essential thing."

"When patients did not follow the advices we gave, we often think why they didn't but never looked deeply to find what the real cause is. We never know their lifestyle, attitudes, beliefs or the misunderstandings. We always look through views of the dentists and forget about patients."

Unlike the fifth year students, the sixth year students had to conduct the project by themselves. However, they learned that in each area, people need a different kind of promotion according to their different contexts.

"We have to be open-minded and don't only look at them individually, but rather look at them as the community as a whole if we want to learn about their lifestyle."

"Since my whole life was in Bangkok, I thought that the problem of lacking of dentists in the countryside wasn't a big deal. But now I discovered that there are a lot of people who need our help."

Theme 3: Translate theory into practice

Most students commented that fieldwork made them understand the lessons they learned more. They also gained new knowledge from community experience and claimed to be able to apply the knowledge to practice in the future.

Fifth-year students wrote, *"I used a web of causation to present the factors related to people's health in the community."*

"During my fieldwork, I became aware of the health promotion concept. I wanted them to be able to take care of themselves and have good health both physically and mentally."

After they experienced working in the field, sixth-year students could relate real-life works to the classroom contents.

"Working in the field work makes me understand more about 'Enabling' in the Ottawa Charter, which is a strategy that allows local

people to use their knowledge practically to strengthen the community action."

The sixth year students realized a lot of important things while they were practicing in the field that correlated to what they had learned in school.

"We cannot just assume the community's problem. To thoroughly understand the problem, we have to go there and explore all factors that caused the problems."

Theme 4: Social awareness

4.1 Understanding people's beliefs and lifestyles

Fifth-year students reflected on understanding and caring people in the village. They became aware of factors causing oral health problems and the barriers to dental care. Some students indicated that their understanding generated compassion to their patients. As the following writings,

"We should understand reasons that sometimes patients cannot come for our appointment. If we only worry about the requirement, we will blame the patient for not showing up and making us lose our work. In fact, there may be something more important to patients than teeth."

The sixth-year students also reflected on understanding people culture and belief of local people.

"Some local people believed that tooth extraction could be lethal and scaling (tooth cleaning) would mobilize tooth."

4.2 Understanding the complexity of health system

Students reflected that they learned about health service system including hospital appointment system, treatment and referring patients, equipment in the hospitals and the roles of dental nurses. They became aware of the complicated oral health system in the community, the insufficient proportion of

patients and dentists in the province and the issues about health insurance. Students explained.

"National health care did not access to people in the village as it should be. The transport system in the village is not convenient, the dentists at the mobile unit are not enough to take care of problems, and people are lack of knowledge and understanding about dental health."

Theme 5: Commitment to service

5.1 The need for changes in community

Students were aware of the community health issues and wanted to find the way to solve the oral health problems and produce better outcomes in the community. Even though, the sixth-year students were spending more time in the community, most of them thought that it wasn't enough time to make the changes in the community. The project needed to keep going after they left. As following wrote,

"Because the project had limited time, the result may not be good enough. I want that the related organization keeps the project going so it will truly develop the community."

5.2 Life Goal

Students were aware of the importance in community's oral health promotion. Besides, they acknowledged that people had an inadequate number of dentists to serve their dental needs. Therefore, it became a motivation for them to go for community services.

"If all the dental students choose not to go to serve our country, who will? I now have a strong determination on working in the public health setting."

"When I saw the high amount of patients, it made me feel a responsibility to work in public health setting considering that the number of dentists is low."

Mostly the sixth year students reflected that their life goal is to be a better doctor.

They want people to have better oral health and a better life.

"I will keep this memory. It inspires me to be a better doctor and promote the oral health of people in the community.

Besides the five areas of learning outcome that students reflected on their writings, the feeling of gratitude was often mentioned across both year groups. Student described that they were grateful to people they lived with and thankful to teachers for giving them a chance of new life experience.

"I want to thank all teachers in the department of community dentistry who gave me an opportunity to have a learning experience like this. It provided my life new refreshment."

"I'm so thankful for the DTCM531 course. I had the best experience, courage and inspiration from it."

Discussion

Our findings suggest that the student's assessment of learning outcomes from the community-based education can be achieved by self-reflection. In addition, the reflection is an important curricular strategy to help dental students accomplish their competencies including interpersonal skill, and cultural and social awareness that are crucial to any health professionals.

The results of this study correspond with the previous studies that reflections influenced student's attitudes and perceptions^{13, 14}. However, most of the studies had been conducted in the outreach clinical setting, which students provided dental services, unlike our study that students focused on implementing oral health promotion project. Mofidi et al.¹² identified many themes related to our findings (i.e. communication skills, the commitment to service), and also found that the most described theme was awareness of complexity of patients' lives (65%). Similarly

to our findings, cultural and social awareness themes were frequently identified (91.1% and 55.3% among 5th year and 6th-year students, respectively).

Although ethical dilemma was another interesting category mentioned in the previous study¹², it did not appear in our study. It is interesting to note that the ethical issues were presented when the students involved with treating poor patients and concerned about inadequately informed of their treatment options^{12, 17}. Since our fieldworks did not intend to have students treating the patients during these courses, but rather provide oral health promotion activities to community members, the situation may be different and less likely to experience the ethical dilemma. However, the results may reflect that our teaching and learning regarding ethical issues still do not come across our dental students as an everyday situation. While ethics was taught in our dental curriculum as a course, the communication about ethical issues during real situations in clinical and community activities may be not rigorous enough to raise student's awareness of this issue. Dental curriculum at all levels and in various settings should integrate the ethical issues and using reflective strategy to stimulate students in everyday practice.

While all themes were found similarly between 5th and 6th-year students, the distributions among these themes were different. The fifth year students frequently reported about cultural and social awareness, while 6th year students mostly mentioned about self-improvement both personal and professional development. This may be due to the nature of the courses that have different objectives between 5th and 6th-year dental students. More of sixth-year students reported the application and translation of theories as they planned for the community project.

Nonetheless, the community-based education helped both fifth and sixth-year dental students broaden their perspectives of the dental health system and consider things in the way that they never thought before.

While this study aimed to investigate the learning outcome from student's reflections, we do not attempt to explore their ability to reflect or how much they can critically think with their thoughts or actions. The benefits of reflective practice often related with the increase ability to judge and think critically¹. A study by Boyd¹⁸ demonstrated that reflective thinking regarding the treatment plan could be developed from the least to the higher analytic level during pre-doctoral dental curriculum. Teekman¹⁹ reported the reflection in nursing and distinguished three levels of reflection (thinking-for-action, thinking for evaluation, and thinking for critical inquiry). However, the quantifying of reflection is challenging due to its nature. In addition, the roles of the trainer or supervisor were emphasized as the important factor to use reflection in learning strategy^{1, 19, 20}.

There are limitations in this study. Firstly, qualitative data interpretation is subjective. We reduced individual interpretive bias by using multiple investigators to analyze the same data, analyze together and discuss the result. Secondly, since only one group of students was included in this study, we cannot refer the results to other student batches. The transferable patterns of learning need to be confirmed by repeating the analysis in the future students. Lastly, most self-reflections might be written after finishing fieldwork, recall bias was possible as students may tend to remember the good memories and the incidents towards the end of the rotation.

In conclusion, according to students' reflections, the fieldwork experience affected dental students' attitudes and perspectives. It also enhanced a sense of profession and

enabled them to appreciate the important role of the dentist in a community. Five major themes of learning outcome were identified including communication and interpersonal skills, personal and professional development, translate theory into practice, social awareness and commitment to services.

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