

Customization of the clinical session timetables by undergraduate dental students at Mahidol University

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Objective: The aim of this study was to investigate the frequency, period, and causes of dental students' customization of their timetable in clinical courses to improve timetable management.

Materials and Methods: The data were retrieved from the request letters for changing clinical session timetables submitted by Year-4, Year-5, and Year-6 dental students in academic year 2019 at the Faculty of Dentistry Mahidol University. The data were analysed in terms of frequency, period of the year, and reasons for the change.

Results: Two-hundred and ninety-one request letters revealed that: 1). The Year-6 dental students most frequently submitted the request forms for a change in clinical session timetables, which comprised 47.08% of the letters, while the forms submitted by the Year-5 and the Year-4 students comprised 43.30% and 9.62%, respectively. 2). The most common period of the year that students requested a change in timetables was October 2019 (20.96%); the second and third most common were September 2019 (20.62%) and November 2019 (16.84%), respectively. 3). The most common reasons for requesting a session change were patients (89.35%, e.g. inconvenient time for patients), student-related issues (5.84%), and learning systems (4.81%, e.g. treatment process, research presentations, and problems regarding the clinical timetable management system).

Conclusion: The Year-6 dental students most frequently requested changing their clinical session timetables, especially between September–November, which was the end of the first semester. The most common reason was patient inconvenience. The relevant factors will be taken into consideration for student timetable management in clinical sessions in the future.

Keywords: Clinical session timetable, dental students, improve timetable management.

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Introduction

Having sufficient time to learn the different aspects of a discipline is important in education systems. Teachers and students require time to manage teaching and learning the specific aspects of a curriculum [1] and improve the education system because it greatly impacts students' development [2]. Student efficiency is the main factor that should be considered in timetable management [3], and this issue needs

to be evaluated every academic semester. In addition, there are other influencing factors in timetable management, including the number of tutors, number of students, and number of courses [4-5].

The Doctor of Dental Surgery Program is a six-year Bachelor's degree program in Health Science; the program is divided into two levels, i.e. pre-clinical and clinical levels. There are clinical session timetables for students studying at the clinical level to help them to gain qualified skills

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based on The Dental Council of Thailand's Standard for Dental Professionals [6] and confidently perform dental treatment in the future. Students are allocated into morning and afternoon sessions in each day of clinical practice. In the same class, the number of visits students use during the clinical sessions in each group must be equal, and morning and afternoon sessions must also be equal. According to the Dental Council Thailand, the ratio of instructors to students in a clinical session must not be less than one instructor to four students, [7].

In clinical session timetable management, the issues that need to be considered are the number of courses, number of credits, number of students, number of dental units to allocate in accordance with the time, and resources available [8-10]. The type of treatment required in each course is different and varies. Each course has its own set of conditions; e.g. a course assigns a group of students to clinical practice on a specific day and time each week, some courses request each group of students performing once a week, or only once a month. In addition, there are self-study sessions allocated equally to each student in the timetables that students can request to swap for clinical sessions.

The conditions used in timetable management of clinical sessions among students in each academic year are recorded using Microsoft Excel to count the number of visits students used in the clinical sessions of each

course; the number of visits must be consistent with the number of credits. However, other requirements should be taken into consideration. Some students may not be available at specific time slots arranged for clinical practice. The course director offers students the opportunity to exchange periods for study sessions on their own using the clinical timetable management "Change Request Form". However, the frequency and reasons of requests for changing clinical time slots has not been yet evident. Therefore, the aim of this study was to investigate the frequency, period, and causes of dental students' customization of the clinical course timetables by evaluating the request forms for a change in clinical session timetables to improve timetable management.

Materials and Methods

This study is a secondary research using data from request letters for changing clinical session timetables submitted by Year 4–6 Mahidol dental students in academic year 2019.

General information of clinical practices

The semester start-end dates of clinical practice in academic year 2019 are shown in Table 1. These comprised the first semester, second semester, and throughout the academic year. The number of clinical sessions was calculated from this information.

Table 1 Semester start-end dates in academic year 2019

Year	First semester		Second semester	
	Start dates	End dates	Start dates	End dates
4	7 May 2019	12 October 2019	22 October 2019	24 April 2020
5	7 May 2019	9 November 2019	11 November 2019	25 April 2020
6	7 May 2019	9 November 2019	11 November 2019	22 April 2020

Clinical session timetable management

According to the Doctor of Dental Surgery Program (Revised Curriculum 2012) [11], the courses in the clinical sessions and extern sessions

(experience in hospital dentistry and fieldwork) that the Year-4, the Year-5, or the Year-6 dental students were registered in were displayed in Table 2.

Table 2 Number of credits in the individual courses allocated in the clinical session timetable in each semester in academic year 2019

Department	Course*	Year-4			Year-5			Year-6			Total
		1 st	2 nd	All year	1 st	2 nd	All Year	1 st	2 nd	All year	
Prosthodontics	PROSTH	-	-	-	-	-	4	-	-	3	7
Operative Dentistry and Endodontics	OP	-	1	-	1	1	-	1	-	-	4
	ENDO	-	-	-	-	-	1	-	-	2	3
Oral Medicine and Periodontology	PERIO	-	-	2	-	-	2	-	-	1	5
	DIAG	-	1	-	-	-	1	-	-	-	2
Oral and Maxillofacial Radiology	X-RAY	-	1	-	-	-	1	-	-	-	2
Oral and Maxillofacial Surgery	SURG	-	1	-	-	-	3	1	1	-	6
Masticatory Science	MS	-	-	-	-	-	-	-	-	1	1
Orthodontics	OD	-	-	-	-	-	1	-	-	-	1
Pediatric Dentistry	PEDO	-	-	-	-	-	2	-	-	2	4
Community Dentistry	COM	-	-	-	1	-	2	-	4	-	7
Advanced General Dentistry	P&E	-	-	-	-	-	-	-	-	1	1
	CD	-	-	-	-	-	-	-	-	3	3
Interdisciplinary (Oral Diagnosis and Radiograph Interpretation)	ID (DIAG & X-RAY)	-	-	-	-	-	-	-	-	1	1
Total			6			20			21		47

-: Course does not require registration.

*Abbreviations were assigned as follows: PROSTH: Prosthodontics, OP: Operative Dentistry, ENDO: Endodontics, PERIO: Periodontics, DIAG: Diagnosis, X-RAY: Oral and Maxillofacial Radiology, SURG: Oral Surgery and Maxillofacial, MS: Masticatory Science, OD: Orthodontics, PEDO: Pediatric Dentistry, COM: Community Dentistry, P&E: Primary and Emergency Treatment, CD: Comprehensive Treatment Planning and Initial Treatment, DIAG & X-RAY: Interdisciplinary (Oral Diagnosis and Radiograph Interpretation).

Guidelines for a request for changing clinical session timetables of dental students

Students are required to complete the request process at least two days prior to the clinical session by submitting a request form for a change in their clinical session timetable signed by the student and an instructor responsible for that specific course. The signed form is submitted to the Education Department of the Doctor of Dental Surgery Program.

A request form for a change in clinical session timetables

The request form for a change in clinical session timetables of dental students used in this study was a request form that Year 4–6 students in academic year 2019 submitted to the Education Department of the Doctor of Dental Surgery Program.

Data analysis

The data were analysed using descriptive statistics for the frequency, semester, number of the request forms, academic year, group, period of the year, course, and reason for the change.

Ethical consideration

This research was performed to improve clinical timetable management for Mahidol dental students. The data were collected from the request forms and recorded anonymously in the analysis programme. Therefore, the recorded data could not be traced to individual students, and this research was reviewed as an exemption by the Research Ethics Committee following the guidelines for the Research Ethics Committee (COE. NO. MU-DT/PY-IRB 2021/028.2508).

Results

The data from the Mahidol dental students' customization of their clinical session timetable and relevant factors in academic year 2019 were analysed for frequency, period, reasons, and courses for the change.

Frequency of a request for a change in clinical session timetables

The evaluation of the 291 request letters demonstrated that the Year-6 dental students most frequently submitted the request forms (137 letters), followed by the Year-5 (126 letters), and the Year-4 (28 letters) students. Details of the clinical courses requested for a change from or a change to are presented in Table 3. The number of clinical sessions and self-study sessions are shown in Table 4.

Period of the year of a request for a change in clinical session timetables

The most common period of the year that students in Year 4–6 requested for a change in timetables was October 2019 (61 requests), the second and third most common were September 2019 (60 requests) and November 2019 (49 requests), respectively (Figure 1).

In October, the changes in clinical timetables of the Year-5 and the Year-6 students were comparable; due to patient inconvenience (28 and 28 requests), students' reasons (0 and 2 requests), and learning system (0 and 2 requests). There was only one request from a Year-4 student (patient inconvenience).

Table 3 Frequency that students requested changes in their clinical session timetables by department/course

	Clinical session requested for a change to																	
	Year	Department/ Course*	PROSTH	OP	ENDO	PERIO	CD/P&E	MS	DIAG&X-RAY	DIAG	SURG	PEDO	OD	X-RAY	COM	SS	Total	
			MAIN CLINIC						MISCELLANEOUS									
Clinical session requested for a change from	4		-	3	-	2	-	-	-	0	0	-	-	0	-	23	28	
		OP															1	1
		PERIO															22	22
		DIAG																0
		SURG																0
		SS		3		2												5
	5		0	9	14	9	-	-	-	0	0	1	0	0	0	93	126	
		PROSTH																0
		OP															34	34
		ENDO															37	37
		PERIO															1	1
		DIAG															21	21
		SURG																0
		PEDO																0
		OD																0
	X-RAY																0	
	COM																0	
	SS		9	14	9						1						33	
6		0	3	14	4	1	6	0	-	1	1	-	-	0	107	137		
	PROSTH																0	
	OP						1									17	18	
	ENDO					1				1						73	75	
	PERIO						1									13	14	
	CD/P&E			2												1	3	
	MS			1													1	
	DIAG& X-RAY															1	1	
	SURG																0	
	PEDO															2	2	
	COM																0	
	SS		3	11	4		4				1						23	
Total			0	15	28	15	1	6	0	0	1	2	0	0	0	223	291	

-: Course does not require registration.

*Abbreviations were assigned as follows: OP: Operative Dentistry, ENDO: Endodontics, PERIO: Periodontics, CD: Comprehensive Treatment Planning/P&E: Primary and Emergency Treatment, MS: Masticatory Science, DIAG & X-Ray: Interdisciplinary (Oral Diagnosis and Radiograph Interpretation), SURG: Oral Surgery and Maxillofacial, PEDO: Pediatric Dentistry, SS: Self-study session

Table 4 Frequency of requesting a change in clinical session timetables

Year	Number of students (people)	Number of clinical sessions (number/person)	Number of self-study sessions (number/person)	Number of a request form (number/year) and percentage	
4	86	90	60	28	9.62%
5	114	300	50	126	43.30%
6	114	315	25	137	47.08%
Total				291	100%

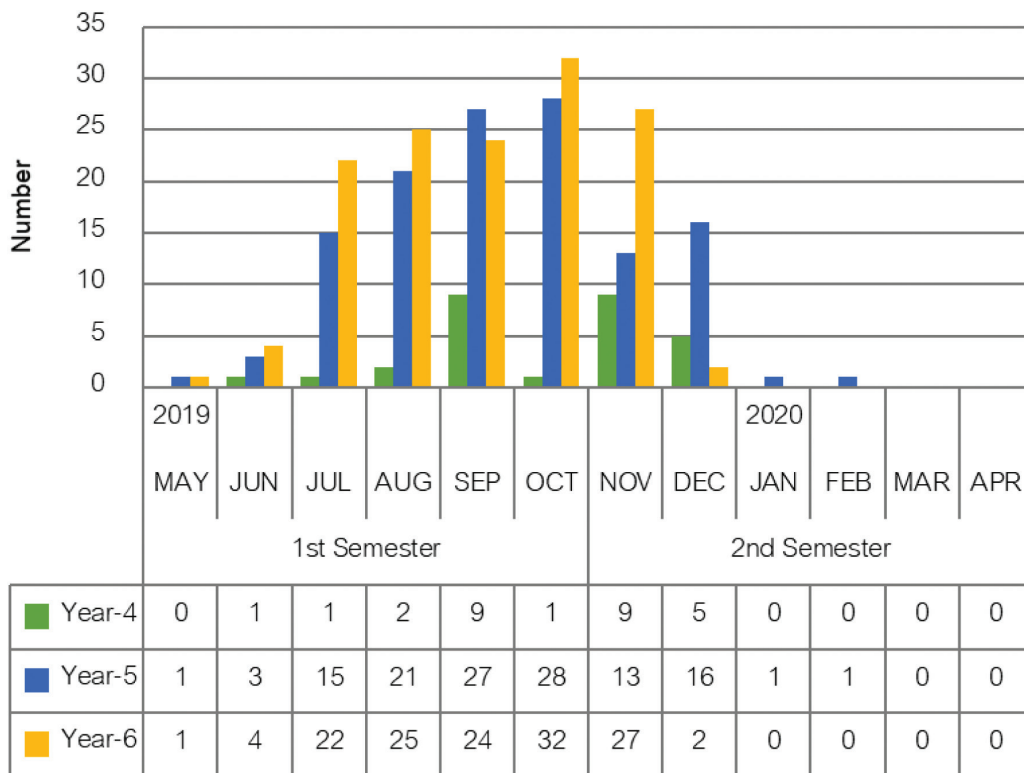


Figure 1 Number of requests to change the clinical session timetable by period of the year

Reasons for changes in clinical session timetables

The Year-6 dental students most frequently requested timetable changes. The most common reasons for changes in the sessions were patient-related issues (260 requests), student-related issues (17 requests), such as sick leave, learning systems/activities (14 requests), including treatment process, research presentation competition, and problems regarding clinical timetable management as presented in Table 5.

Courses students requested for changes in clinical session timetables

The clinical courses in Year-5 and Year-6 comprise 10 courses (20 and 21 credits, respectively). The Year-6 dental students most frequently requested for a change of the clinical session in the main clinic from Endodontics (75 requests), followed by self-study sessions (23 requests), and Operatives Dentistry (18 requests). The students requested changes mostly from self-study

Table 5 Frequency of reasons for changing the clinical session timetables

Reasons for a change in timetables	Year 4	Year 5	Year 6
Patients	25	116	119
- Inconvenient time for patients	25	116	119
Students	2	3	12
- Sick leave	1	1	-
- Interview for internship	-	-	4
- Personal Leave	1	2	8
Learning systems/ activities	1	7	6
- Treatment process	-	3	1
- problems regarding clinical timetable management	1	1	5
- Research presentation competition	-	3	-
Total	28	126	137

sessions to Endodontics (11 requests (Table 3). In addition, the request forms for a change in clinical session timetables for Year-5 dental students were also used frequently for changing from Endodontics (37 requests), Operative Dentistry (34 requests), and self-study session (33 requests).

The clinical courses in Year-4 consist of 5 courses (6 credits). The students requested changes mostly from Periodontics in the main clinic to self-study sessions (22 requests) (Table 3).

Discussion

The Year-6 dental students most frequently submitted the request forms for a change in clinical session timetables between August–November 2019, which was the end of the first semester and the beginning of the second semester, because at this time of the year students could manage their time more effectively. The common reason for the change of the sessions

was that patients were not available at the appointment time, which was during working hours. This uncontrollable factor results in stress among the students [12-16]. In addition, a self-study session in the Year-6 students' timetable (25 sessions/person) was a session that students were free and could use for clinical courses. However, the self-study sessions of the Year-6 students were fewer than those of the Year-4 (60 sessions/person) and the Year-5 (50 sessions/person) students. This is because the Year-6 students have more experience in clinical session management and have more patients to allocate clinical sessions to.

The changes in the clinical session timetables of the Year-5 students were similar to those of the Year-6 students in terms of the reason for the change and frequency. In contrast, the Year-4 students did not require a change of sessions, because their registered courses and clinical sessions were limited, and they had no experience in managing clinical session timetables.

Timetable management is a part of resource allocation. Relevant factors, rules, and regulations are taken into consideration to create an effective timetable that is practical, precise, and flexible. The clinical session timetable management of the Year-4, the Year-5, and the Year-6 dental student needs to consider various factors, including the number of weeks in each semester, number of credits, number of students in each academic year, number of available units in the session, treatment process in each course, such as observation or medication period in endodontic treatment that may take a month, specific day of the week for the clinical procedure, starting and ending of the semester of the primary schools that involve public health dentistry and pediatric dentistry courses, number of public holidays, and starting and ending of the semester of each academic year.

At the Faculty of Dentistry Mahidol University, there are 2 types of practice clinics: the main clinic and miscellaneous clinics. The timetable customization of a clinical session occurred mostly in the main clinic, especially in Endodontics, compared with Operative, Periodontics, and Prosthodontics. The reasons why most of the clinical session changes were that dental students have to manage their own patient appointments for incomplete treatment of courses in the main clinic. Surprisingly, the frequency of Endodontics (3 credits) students requesting changes in their clinical session timetable was more than that for Prosthodontics (7 credits). The reasons for a change in the clinical session timetable in Endodontics were mainly due to the session being at an inconvenient time for patients and the department allowing the exchange of periods as necessary. In contrast, the department of Prosthodontics does not allow students to request for changing their clinical session timetables to do laboratory work or have free time/self-study.

However, due to this restriction some students could not fulfil their requirements within the allotted time.

Limitations

The reasons that students requested a change in their clinical session timetables were quite varied. They were grouped into categories, which were patients, students, and learning systems/ activities.

Suggestions

Suggestions for clinical session timetables

The clinical session timetables of the dental students must be consistent with the number of credits for each course in each year. The educational staff should arrange the timetables at least one month before the beginning of the semester and allocate them to each group of students. Students can request a change in their timetable if they are unable to attend the allocated session. Moreover, the results of the present study indicated that that the period of the year that students requested timetable changes was between August and November 2019, which was in the end of the first semester and the beginning of the second semester. The self-study sessions that are considered helpful for students should be allocated equally to each student at this period of the year. However, the number of self-study sessions should not be excessive, because they could affect the school term and holidays. Another solution is to have students make their own schedule, especially for the courses in the main clinic that are the most problematic. That will help solve the problem of patient inconvenience in receiving treatment. The conditions of clinical session timetable management requested by each clinical course should be more flexible, not only in the courses in the main clinic, but also in the miscellaneous clinics. A possible way to

schedule treatment in the main clinic would be for the students to not have to treat their own patients, but to complete steps of the requirements supervised by the clinical staff.

Suggestions for further research

The most frequent reasons that students requested a change in timetables were patient-based. Thus, future investigations should evaluate the perceptions of the patients.

Conclusion

The Year-6 dental students most frequently requested changing their clinical session timetables, especially between September–November, which was the end of the first semester. The most common reason was patient inconvenience. The relevant factors will be taken into consideration for student timetable management in clinical sessions in the future.

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