Factors Contributing to Students Engagement: A Case Study at the Institute of Medicine at SUT

ความผูกพันต่อสำนักวิชาแพทยศาสตร์ของนักศึกษาแพทย์ มหาวิทยาลัยเทคโนโลยีสุรนารี

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ABSTRACT

In higher education, much attention has been focused on the enhancement of the educational experience, allowing students to successfully develop and thus make the most of not only their potential, but also the numerous other benefits education has to offer. Being engaged both institutionally and academically plays a vital part in developing their potential and performance. Therefore, this paper studied the engagement level towards the academics at the Institute of medicine. Factors contributing to institutional engagement were also analyzed. The participants include 229 medical students. Each participant was asked to answer a general demographic questionnaire, the Institute engagement questionnaire, the Utrecht Work Engagement Scale–Student version (UWES-S) questionnaire, and a questionnaire of all relevant factors. Student engagement was assessed through statistical analysis. These included percentage, mean, standard deviation, and stepwise multiple regression of the constituent factors. The Institute engagement level was 3.73. Factors that significantly pertained to the engagement level were teachers (p = 0.01*), staff (p = 0.01*), friends (p = 0.02*), and seniors peers (p = 0.03*), respectively. Academic engagement was found to vary by the level of study. Medical students in their 1st, 2nd, and 3rd years exhibited engagement levels of 4.94, 4.87, and 4.55, respectively. Given the group, students' engagement toward the university was of a high level. The most important contributing factors were their relationship with teachers, staff, friends, and senior peers. However, the academic engagement level tended to decrease as study progressed. It was conjectured that this notable decrease resulted from increasing complexity in the program as specified by the curriculum. Positively engaged students better adapt to the academic context of higher education. Hence, they are much likely to succeed.

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บทคัดย่อ

การศึกษาในระดับอุดมศึกษาให้ความสำคัญกับการพัฒนาศักยภาพของนักศึกษา เพื่อให้นักศึกษาประสบความสำเร็จทางการศึกษาและเป็นแพทย์ที่ดีในอนาคต ความผูกพันต่อสำนักวิชาแพทยศาสตร์และด้านวิชาการมีส่วนสำคัญในการพัฒนาศักยภาพและประสิทธิภาพของนักศึกษา งานวิจัยนี้มีวัตถุประสงค์เพื่อศึกษาระดับความผูกพันต่อสำนักวิชาแพทยศาสตร์ ระดับความผูกพันต่อด้านวิชาการ และปัจจัยที่ส่งผลต่อความผูกพันต่อสำนักวิชาแพทยศาสตร์ โดยศึกษาจากนักศึกษาแพทย์จำนวน 229 คน ผู้เข้าร่วมแต่ละคนตอบแบบสอบถามข้อมูลทั่วไป แบบสอบถามความผูกพันต่อสำนักวิชาแพทยศาสตร์ แบบสอบถามความผูกพันต่อด้านวิชาการ โดยใช้แบบสอบถาม Utrecht Work Engagement Scale - Student version (UWES-S) และแบบสอบถามเกี่ยวกับปัจจัยที่ส่งผลต่อความผูกพันต่อสำนักวิชาแพทยศาสตร์ การวิเคราะห์ทางสถิติ ได้แก่ ร้อยละ ค่าเฉลี่ย ส่วนเบี่ยงเบนมาตรฐาน และศึกษาปัจจัยที่เกี่ยวข้องจากการวิเคราะห์ข้อมูลการถดถอยพหุคูณแบบขั้นตอน พบว่าระดับความผูกพันต่อสำนักวิชาแพทยศาสตร์เท่ากับ 3073 ปัจจัยที่ส่งผลต่อความผูกพันอย่างมีนัยสำคัญ ได้แก่ ความสัมพันธ์ที่ดีระหว่างอาจารย์ ($p = 0.01$ *) เจ้าหน้าที่ ($p = 0.01$ *) เพื่อน ($p = 0.02$ *) และรุ่นพี่ ($p = 0.03$ *) ตามลำดับ ระดับความผูกพันต่อด้านวิชาการของนักศึกษาแพทย์ในปีที่ 1, 2 และ 3 มีระดับความผูกพัน 4.94, 4.87 และ 4.55 ตามลำดับ เมื่อพิจารณาจากการศึกษาพบว่า นักศึกษามีความผูกพันต่อสำนักวิชาแพทยศาสตร์ในระดับสูง ปัจจัยที่ส่งผลต่อความผูกพันมากที่สุด ได้แก่ ความสัมพันธ์กับอาจารย์เจ้าหน้าที่ เพื่อน และรุ่นพี่ อย่างไรก็ตามระดับความผูกพันต่อด้านวิชาการมีแนวโน้มลดลงเมื่อนักศึกษาเรียนในชั้นปีที่สูงขึ้น เนื่องจากการเรียนมีความซับซ้อนมากขึ้น นักศึกษาที่มีความผูกพันในเชิงบวกจะปรับตัวให้เข้ากับบริบทด้านวิชาการของการศึกษาระดับอุดมศึกษาได้ดีขึ้นและมีแนวโน้มที่จะประสบความสำเร็จ

Introduction

During the past few decades, student engagement has become an increasingly active area of investigation, especially in higher education. In the 2011 issue of the UK Higher Education white paper, for example, there was a published article entitled, “Students at the Heart of the System” (Great Britain. Department for Business Innovation & Skills, 2011). Later in 2017, student engagement was recognized by an Australian researcher (Brew and Maintain, 2017), as one of the prime determinants in learning and personal development during university study (Feldman, 1994; Pascarella & Terenzini, 2006). Broadly speaking, student engagement has been characterized by cognitive, behavioral, and affective indicators exhibited by a student in specific learning tasks (Skinner & Belmont, 1993). Alternatively, a conventional definition given for student engagement by Natriello (Natriello, 1984), was “participating in the activities offered (by the school) as part of the program”, while a more recent definition of student engagement as described by Klemenčič (Klemenčič, 2015) was as an ‘agent’ that promotes the quality of a student’s self-reflection of and hence interaction with their environment. It has been accepted that student engagement may strengthen or weaken over time, depending both on operating conditions and their social relationships.

In this paper, engagement is defined as a positive, fulfilling, work-related state of mind characterized by vigor (or energy), dedication, and absorption (Cameron & Spreitzer, 2011). Since one of the key players in developing student engagement is the affiliating institute (Sheard, Carbone, & Hurst, 2010), it is thus vital for universities to appreciate the diverse backgrounds, personalities, and learning styles (DiLullo, McGee, & Kriebel, 2011) of 21st-century students. Based on the unique characteristics of 21st-century students, engagement research has typically focused on three aspects, i.e., their thinking, their feelings, and their behavior (Fredricks, Blumenfeld, & Paris, 2004; Henrie, Halverson, & Graham, 2015). One

study (Zepke, Leach, & Butler, 2010), for example, showed that teachers could utilize insights into these characteristics in motivating students and engaging them with the university. By improving these aspects of engagement, favorable outcomes, such as satisfactory grade points, course completion, and decreased dropout rates (Dotterer & Lowe, 2011; Fredricks et al., 2004; Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008; Laing, C. L., & Laing, G. K., 2015; Reyes, Brackett, Rivers, White, & Salovey, 2012) are foreseen.

Not only applicable for typical classroom education, a recent meta-analysis, (Naing, Wai, Durham, Whittaker, Win, & Aung, 2015) also found that by using standardized tools and thereby having students engaged in research resulted in students being more attracted to research recommendations. Other previous studies showed that proper classroom management encouraged student engagement, especially in terms of their relationships with teachers (Klem & Connell, 2004) and those with friends (Furrer & Skinner, 2003). Coates (Coates, 2007) studied factors affecting engagement and found that these data could provide insights into student performance and progression. Assessing students' engagement was thus useful when evaluating the quality of their learning experiences, which in turn supported the teacher's decision making when it comes to resource provision and course content.

Focusing on first-year medical students enrolled in a physiology course and studying in different learning environments, Mari K. Hopper and Alexis N. Kaiser (Hopper & Kaiser, 2018) determined the levels of student engagement and whether higher skill proficiency and knowledge acquisition were demonstrated. They found that those students who might not perceive themselves as highly engaged were adept in using higher-order skills and excelled in delivering course learning objectives. In another environment, James D. Pickering and Bronwen J. Swinnerton (Pickering & Swinnerton, 2018) investigated the dimensions of student engagement with technology-enhanced learning (TEL) resources, by using exploratory factor analysis in 192 first-year medical students. In that study, no correlation was observed between the levels of engagement and TEL resources. In another more geographically similar study on engagement factors conducted by the Faculty of Tropical Medicine, Mahidol University, Thailand (Bauprea, Chaiwaraporn, & Pisitsak 2016), it was reported that most students had a high level of engagement. As conjectured therein, it resulted from teaching and learning that made students improve their creativity, and as a result led them to being very satisfied with the current institute and motivated them to carry on in their study.

Herein, the term student engagement is referred to as medical students being engaged both institutionally and academically. This paper focuses on assessing the levels of engagement in both the institute and academic setting. Since engagement towards the Instuitute of Medicine was domain specific, additional studies on their contributing factors were determined. Meanwhile, academic engagement was known to be dependent on individual vigor, dedication, and absorption, yet these factors were not elaborated on in this study. It was hypothesized that more engaged in their higher years. The participants were medical students currently studying at the Institute of Medicine, Suranaree University of Technology. The remainder of this paper is organized as follow: The Methods section describes the demographic characteristics of the participating students, the data collection procedure, the analytical instruments, and the methods. After that, the Results section reports findings on student and academic engagement levels, followed by a relevant discussion on the subsequent section. Finally, limitations of the current study and prospective improvement are suggested.

Method

Observation and analyses in this study was cross-sectional, i.e., data collection was conducted between 20 September and 3 October 2018. This study officially received ethical approval from the Research Ethics Committee of Suranaree University of Technology (Thailand), Approval EC COA No. 61/2561.

Participants

Participating subjects were medical students, studying in their 1st, 2nd, and 3rd years at Suranaree University of Technology, Nakhon Ratchasima, Thailand, during the 2018 academic year. A total of 229 students willingly cooperated in completing the questionnaire/s.

Research Procedure

1. Conducted a literature review on medical students' engagement, to devise the questionnaire content.
2. Created the questionnaire, based on the studies.
3. Specified questions according to the research objective, i.e., covering all contributing factors for 1st – 3rd year medical student engagement, in 5 and 7 Likert scales.
4. Validated the questionnaire. To this end, its content was validated and evaluated in terms of the Index of Item – Objective Congruence (IOC) by three experts. The accepted accuracy of the latter was no less than 0.67.

Instruments

The questionnaires adopted in this study were divided into four main parts as follow:

1. General demographic questionnaire, consisting of items regarding, for example, gender, age, domicile, year, study scheme/ studentship (e.g., One District One Doctor: ODOD, Collaborative Program to Increase Production of Rural Doctor: CPIRD, and Consortium of Thai Medical Schools: COTMES.), and grade point average (GPAX).
2. Institute engagement assessment questionnaire, consisting of 15 items, each of which was scored on a 5-point scale (1 – least and 5 – greatest). The questionnaire had been evaluated by three experts according to the Index of Consistency (IOC) scheme. The engagement levels were divided into five intervals, as listed in Table 1.

Table 1. Institute engagement levels, each specified within a range of average scores.

Averaged Score	Institute Engagement Level
4.21 – 5.00	Greatest
3.41 – 4.20	Great
2.61 – 3.40	Moderate
1.81 – 2.60	Less
1.00 – 1.80	Least

3. Academic engagement was assessed by 9–items Utrecht Work Engagement Scale–Student version (UWES-S). This questionnaire, adapted from that proposed by Schaufeli (Schaufeli, Martinez, Pinto, Salanova, & Bakker, 2002), assessed 3 engagement aspects, i.e., vigor, dedication, and absorption. It consisted of 9 items, each of which was scored on a 7-point scale (1 – never and 7 – always). The larger values indicated higher levels of engagement. More specifically, given a statement about how one feels about the medical study, the subject indicated how often they feel that way. Each frequent level was assigned with a score, as listed in Table 2.

Since the questionnaire evaluated in this part was in 7 Likert Scales (1 – 7), according to frequency levels, interpretation of the answers to this questionnaire were made by averaging answers to all items and assigned academic engagement levels according to the criteria listed in Table 3.

4. The factors contributing to engagement in the Institute. It was divided in terms of student relationships into five domains, i.e., those with their teachers, staff, seniors, friends, and juniors. It consisted of 50 items, each of which was scored on a 5-point scale (1 – very low and 5 – the most). It was evaluated by three experts according to the IOC scheme.

Table 2. Frequency levels on how one feels about medical study and the associated scores.

Never	Almost Never	Rarely	Sometimes	Often	Very Often	Always
1	2	3	4	5	6	7
Never	A few times	Once a month or less	A few times a month	Once a week	A few times a week	Every day

Table 3. Academic engagement levels, each specified within a range of average scores.

Averaged Score	Academic Engagement Level
6.14 – 7.00	Most Engaged
5.28 – 6.14	Greatly Engaged
4.42 – 5.28	Engaged
3.57 – 4.42	Neutral
2.71 – 3.57	Unengaged
1.85 – 2.71	Greatly Unengaged
1.00 – 1.85	Most Unengaged

It is worth noted here that, the full scale of each academic engagement item differed than that of the institutional engagement ones. This is because the former adopted the 7-scale UWES-S, whose **sentimental scales** were better measured at a higher precision, whereas the latter asked each responder specifically of their **engagement levels**, which were generally assessed at a lower resolution, i.e., 5 scales.

Procedures

Upon collecting the data, we employed a convenience-sample approach and tried to recruit prospective targets ($N = 275$) by approaching them in class and asking them to complete the online survey. The response rate was 83.27% ($N = 229$).

Data analysis

Collected data were analyzed by using SPSS Statistics 17 (IBM, Chicago, IL, USA) software. The statistical methods employed in the subsequent analyzes included percentage, mean, standard deviation, and step-wise multiple regression. One-way ANOVA was used to assess the significance of each of the findings, i.e., the means for student and academic engagement scores, and the engagement contributing factors.

Table 4. Descriptive Characteristics of the Samples

Characteristics	Count	Percentage
Gender		
Male	100	43.67
Female	129	56.33
Age (Years)		
18 – 19	125	54.59
20 – 21	101	44.10
22 – 23	2	0.87
More than 23	1	0.44
Domicile		
Nakhon Ratchasima	63	27.51
Chaiyaphum	47	20.52
Burirum	43	18.78
Surin	53	23.14
Bangkok	9	3.93
Others	10	4.37
Not Disclosed	4	1.75
Year of Study		
1st	92	40.17
2nd	64	27.95
3rd	73	31.89
Studentship Program		
COTMES (Consortium of Thai Medical Schools)	27	11.79
CPIRD (Collaborative Program to Increase Production of Rural Doctor)	142	62.01
ODOD (One District One Doctor)	60	26.20
Grade Point Average (GPAX) Ranges		
3.51 – 4.00	99	42.23
3.01 – 3.50	50	21.83
2.51 – 3.00	16	6.99
No Information	64	27.95

Findings

This study conducted an online survey, focusing on medical students in their first three years during the academic year 2018. Out of a target group of 229 students, 275 completed records were received (83.27%). More specifically, the response rates of 1st, 2nd, and 3rd years students were 100%, 69.57%, and 80.22%, respectively. The demographic data are shown in Table 4. According to the survey, carried out following our objectives, the levels of engagement in all categories are listed in Table 5. From this table, the overall institute engagement is 3.73, which is clearly a high level.

The final objective was to study the factors contributing to engagement toward the Institute of Medicine. Pearson Chi-Square was employed to evaluate relationships between categorical variables. The results are shown in Table 6. It can be noted from the Table that the Year of Study (0.000), Grade Point Average (0.001), and Domicile (0.037) were the most significant factors ($p < 0.050$). These levels of student engagement were also compared between different years of study by using one-way ANOVA. It was found that the years of study played a major part ($p < 0.050$) in engagement levels, as noted in Table 7. In addition,

since differences in engagement levels were observed in different years of study, Scheffé's method was thus utilized for paired comparison. The resultant graphs are depicted in Figures 1 and 2. It is conspicuous that the levels of student engagement tended to decrease in higher years of study.

Table 5. Levels of Engagement

Variables (Unit)	Mean ± *SD*	Full-scale	Level
Institute Engagement	3.73 ± 0.66	5.0	Great
Academic Engagement	4.80 ± 1.26	7.0	Engaged
- Absorption	4.90 ± 1.32	7.0	Engaged
- Dedication	4.86 ± 1.30	7.0	Engaged
- Vigor	4.62 ± 1.30	7.0	Engaged

Table 6. Relationship between Personal Attributes and Institute Engagement

Personal Attributes	*df*	*p*-Value
Year	80	0.000*
GPAX	120	0.001*
Domicile	200	0.037*
Gender	40	0.509
Age	120	0.791
Studentship Program	80	0.706

* statistical significance at the level 0.050

Table 7. Comparison of Average Engagement Score, Classified by Year

	Sum of Squares	*df*	Mean Squares	*F*	Sig.
Between Groups	40.769	2	20.385	14.310*	0.00
Within Groups	317.622	223	1.424		
Total	358.431	225			

* statistical significance at the level 0.050

Subsequently, the factors contributing to medical students' engagement were analyzed by means of stepwise multiple regression. The resultant measures are shown in Table 8. It can be drawn from the table that the relationships with their teachers (0.006), staff (0.009), friends (0.020), and senior peers (0.028), played the major roles in determining their engagement levels.

Table 8. Factors Affecting Medical Students' Engagement toward the Institute of Medicine

Factors	***B***	***S.E.b***	***β***	***t***	***p*-Value**
Teachers	0.263	0.095	0.247	2.769	0.006
Friends	0.210	0.089	0.201	2.366	0.020
Staffs	0.179	0.068	0.216	2.646	0.009
Seniors	0.182	0.082	0.180	2.223	0.028
a = 0.457	$S.E._{est}$ = 0.464				
R = 0.633	*F* = 21.098				
R^2 = 0.401	*p*-Value = 0.000				

*$p < 0.050$

Discussion

Assessing the engagement of medical students in their 1st, 2nd, and 3rd years indicated a high level of engagement in the Institute of Medicine, with a very high average score of 3.73. The level was comparable to the survey results obtained from those studying at Dhurakij Pundit University (Nukrob, Jaruwan, Annop, & Suchada, 2014). Their surveys and ours, however, differed from those of other academic institutes, whose engagement levels of science, engineering, and medical students (Ahlfeldt, Mehta, & Sellnow 2005; Hopper & Kaiser, 2018; Hopper, 2016; Ollands, Hadgraft, Ward, & Grundy, 2005) were much lower than anticipated.

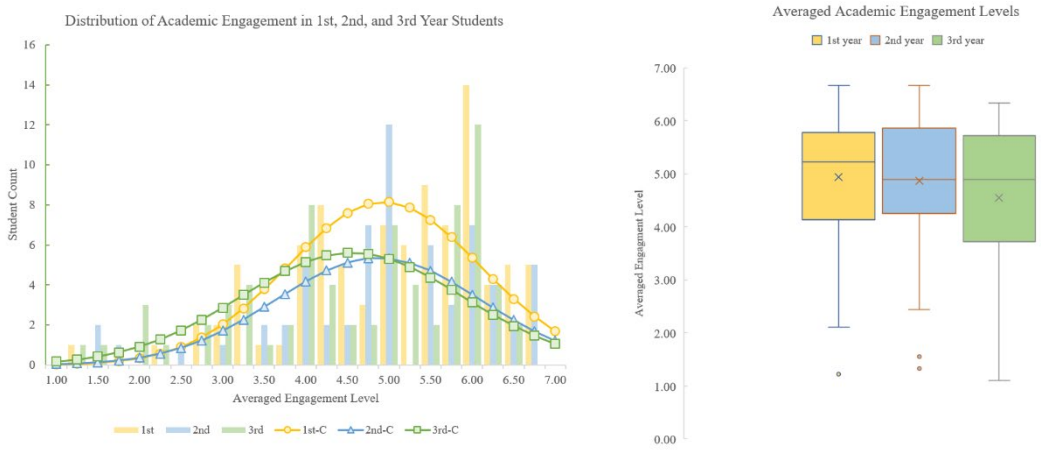

Figure 1 Distribution and Box-Whisker Plot of the Academic Engagement Levels

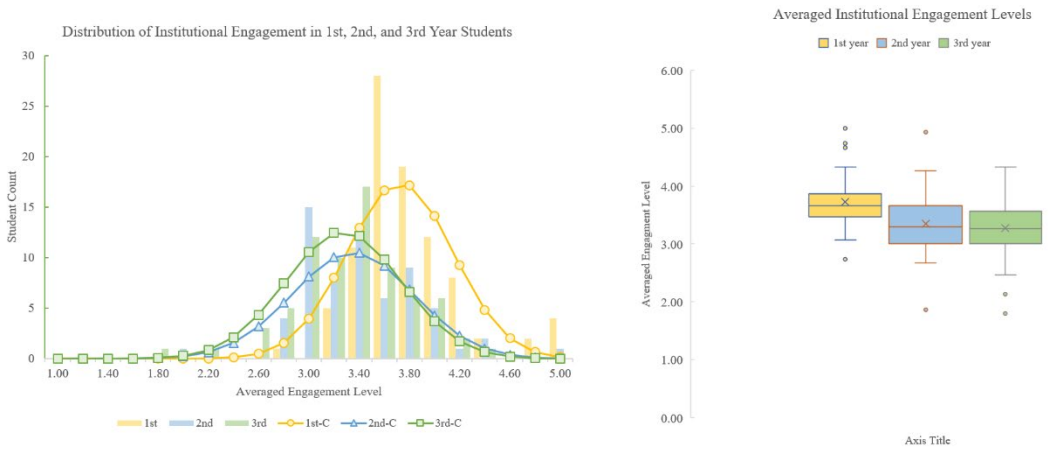

Figure 2 Distribution and Box-Whisker Plot of the Institutional Engagement Levels

Medical students were generally engaged with medical study, with an average score of 4.80 (being engaged). The prominent characteristics were 1) being accustomed to study 2) dedication to study, and 3) being diligent and enthusiastic at school (Schaufeli, 2017). It is worth noting that the academic engagement correlated with or reflected the engagement with the Institute of Medicine. Nonetheless, the emphasis of the academic engagement study was placed on individual student's characteristics. In the study it was found that the preferable ones for being a good future doctor were vigor, dedication, and absorption. The resulting academic engagement may be viewed as a part of the institutional engagement. Nonetheless, for a medical student, who is determining to pursue a career in this profession, being academically

unengaged would inevitably impede their study and academic success (Imlawi, Gregg, & Karimi, 2015). The statement was empirically concurred by a study, conducted by Mari J. Causo-Hologado (Casuso-Holgado, Cuesta-Vargas, Moreno-Morales, Labajos-Manzanares, Barón-López, & Vega-Cuesta, 2013), which found a positive correlation between academic engagement (especially in the students) and achievement. Likewise, several studies also reported that student engagement, generally identified as the eagerness to participate in learning and responsibility, played a vital part in student learning, personal development, and satisfaction (Carini, Kuh, & Klein, 2006; Kuh, 2003; Trowler, 2010). It was evident in this study that, medical students were academically engaged. This finding concurred well with previous studies. It also indicated that these students would achieve good outcomes, academically.

Following the current assessment, our analyses further revealed the factors contributing to students' engagement including:

1. The factors relating to faculty members were a prime determinant in medical students' engagement. A similar finding was discussed in a study by Benbassat (Benbassat, 2014). It was indicated that a teacher serves the role model in teaching and student assessments, especially if such attributes were duly adopted by the medical students themselves. The faculty members at the Institute of Medicine were mostly willing to learn new things and they believed that learning happens all the time. The authors also learned from the students that eagerness to learn, and technology awareness are favored characteristics of faculty members that impress students. Consequently, the students were determined to be like such teachers. This finding agrees with the social cognitive learning theory (Bandura, 1986), on imitating a role model. The relationship between medical students and their teachers was also studied in a work by Aldrup (Aldrup, Klusmann, Lüdtke, Göllner, & Trautwein, 2018). They found that hostile relationships could have adverse effects on students' behavior. While many existing studies (Blömeke, Olsen, & Suhl, 2016; Darling-Hammond and Lieberman, 2013; Nordenbo Larsen, Wendt, & Østergaard, 2019; Wang, Coleman, Coley, & Phelps, 2003) were concerned with the quality of the teachers and that of teaching, this study focused on the relationship between the teachers and their medical students. It was evident that achieving the preferable relationship between students and teachers resulted in medical students being well engaged. In particular, when students have established good relationships with their teachers and have adapted well to the core values and regulations of the institute, their learning experiences become much more pleasant, thus, fostering their institutional engagement.

2. In addition, the relationship between the support staff and the medical students was found to be a driving factor. In an academic institute, supporting staff facilitates not only faculty members but also students on administrative matters while offering advice in general, such as course registration, making appointments with teachers, and facilitating coordination between teachers and students. Moreover, supporting staff could take care of students, notify them of important matters via social media, so that students would be well informed and act accordingly. Although it may seem that these actions are trivial, they impressed the students and hence resulted in better engagement with the Institute of Medicine.

3. It was further established that classmates had a strong influence on student engagement toward the Institute of Medicine. Relationships of the students both with their friends and their peer group were significant and influential for their university life. Newcomb (Newbomb, 1962) clearly stated that relationships with their peer group had a great impact on students in higher education, especially in terms of attitude and capability. More specifically, a study by Carl Senior and Chris Howard (Senior & Howard, 2014) concluded that such a relationship benefits learning in higher education. It promotes an understanding of lessons in classes and increases the ability to efficiently apply them in real-life. The Institute of Medicine puts an emphasis on good peer relationships in class. To this end, it organized a variety of mutual

learning activities. These were tutoring before exams and friend helping friend activity, by which friends kept an eye on their peers, observing peer behaviors that may lead to stress or depression due to study.

4. Another party, whose relationship with the students played a vital part in engagement toward the Institute of Medicine was the senior peer group. To a medical student, they are more closely familiar than with the teachers. When a student is first enrolled in their 1st year, they would participate in junior welcoming activities, organized by their senior peer group. In these activities, a freshman is taken care of and given advice, by senior peers, on their studies and in adapting to university life, as well as suggestions on study materials. Through these activities, a positive relationship developed among them that could be advantageous to their mutual engagement toward the institute. In addition, there was also the "White Coat Ceremony", in which 4th year students were presented with a white coat and prepared to visit patients in wards and have actual contact with patients. For those in their junior year, observing the ceremony of their senior peers getting into clinic classes motivates their studies and can encourage feelings of pride in studying medicine.

According to the academic engagement results of 1st to 3rd year medical students, it was found that they were full of energy and were very attentive in their studies. The findings reflected their enthusiasm and familiarity with education, as a means of achieving their goals. In terms of academic dedication, however, 1st year students felt that they were inspired by studies, due to various reasons, e.g., teachers being proficient in teaching, enabling insights of the content and hence students' willingness to learn, teaching media were up-to-date and interesting, and teachers being experienced in their areas of expertise, etc. For 2nd and 3rd year students, they took pride in their studies. It was manifested by diligence and perseverance in their studies to maintain satisfactory results and goals, set forth earlier in their medical study journey.

Conclusion

The level of engagement toward the Institute of Medicine was 3.73. The factors contributing to this engagement were the relationships with their teachers, staff, friends, and senior peers. Meanwhile, the academic engagement level was 4.87. However, it was found that the engagement levels of the students, both toward the institute and academically, decreased as they proceeded through higher years. This finding was not in line with our hypotheses. The authors thus conjectured that in addition to subjects getting much more difficult, there were also mental health issues involved. Working as medical student advisors, one of the authors found that these students had faced greater mental problems. According to both academic and institutional engagement surveys, it was found that the engagement levels decreased as the students were at higher years of study. Further detailed investigations into likely contributing factors of this bearing are still needed, but we conjectured that they included individual personalities, backgrounds, and even the studying contents.

Moreover, analyses and relevant implications may also be used as a guideline in curriculum development and in devising appropriate activities at the institute. Resources and suitable development programs should be allocated and offered, for instance, to supporting staff, so that they are able to better assist both academic staff and students, and in turn strengthen their mutual relationships. The ultimate goal of this engagement-driven scheme is to nurture medical students, qualified to practice medicine, and to provide medical treatments to patients in a people-centered healthcare system (WHO, 2019) while conforming to the medical practices criteria as announced by the Medical Council of Thailand.

Issues needed to be addressed in future works include continuing evaluation of the engagements of medical students through their clinic years (4th, 5th, and 6th years). This is because it was observed in the present study that the nature of students' engagement changes

over time. It is thus worth monitoring such changes (Krause, 2005). Most importantly, students in their last three clinical years are getting more involved in practical training to be a professional doctor.

Limitations

This study is expected to be useful in educational development especially in medical school, which requires effective development of both curricular programs and constructive activities for medical students in a variety of areas. Nevertheless, care should be observed when adopting the results in an actual environment. There are limitations associated with the current study and should be well noted, as follow:

1. The response rate of 2nd year students were only 69.57 percent. This may be due to conducting the surveys within a very limited time. The handling of the questionnaire was made during a gathering event when this target group did not have any class. In addition, they had just passed their 1st year, feeling that they should be working harder, fewer than anticipated 2nd year students were thus able to make it to the gathering.

2. On a similar note for the 1st year students, the survey was conducted just two months after the term had started. During this period, being recent graduates from high school, freshmen were enjoying participation in various welcoming activities and excited by the new environment and friends. In addition, basic coursework during their first years was not so demanding as those in the subsequent years. The engagement level was therefore expected to be relatively overrated.

3. The surveys were primarily based on a single-ended questionnaire with no interview. Thus, it lacked in-depth information as to, for instance, why the 3rd year medical students exhibited lower academic engagement levels than those in their 1st and 2nd years.

4. The students in their 4th, 5th, and 6th years, were not considered in this study since they were studying outside the main campus.

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