

Applying SWOT Analysis to Solve a Learning Problem: An Experiential Case at Thai-Nichi Institute of Technology

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Abstract - This article presents an experiential case of problem solving in regressive learning achievement of a student. The observed problem had been investigated and analyzed with business analysis principle: Strength (S), Weakness (W), Opportunity (O), and Threat (T), or so-called “SWOT”, through advisory and teacher’s roles. According to the problem analysis, group-based learning was considered as the learning strategy in this case. The student’s positive feedbacks were shown in learning behavior, personal interrelationship, and learning achievement.

Index Terms - SWOT, Learning, Advisory, Peer-assisted, Kaizen.

I. Introduction

As being a new advisor of a group of students in business information technology program at Thai-Nichi Institute of Technology (TNI), one of problems had been observed and perceived on a male student. In his entering semester (1/2010), his learning achievement was at good level in many subjects. During 2/2010 to 2/2011 semesters, his learning behavior and achievement [1] had changed into deterioration as shown in Table I.

A student’s advisor takes an important role in student development [2]. For examples, the advisor can help students (1) to achieve in their learning, (2) to reinforce desired characteristics of graduates.

TABLE I The student’s data

Semester	# of registered subjects	# of withdrawn subjects	# of subjects getting “F” because of having less than 80% attendance	GPA
1/2010	7	0	0	2.71
2/2010	6	2	0	2.59
3/2010	1	0	0	2.58
1/2011	6	1	1	2.35
2/2011	6	1	2	2.29

The advisory role includes giving advice to an individual student for self adaptation to be suited in university life, learning plan, joining activities, problem solving in either academic or personal aspects. According to the institution’s policy through advisor system, each student has to meet his/her

advisor to release lock of register system before register duration. This student decided to register in database system subject. Fortunately, the subject was pre-assigned to be taught by his advisor.

Both of advisor’s role and teacher’s role could benefit to solve the problem. To investigate and analyze the observed problem systematically, Strength (S), Weakness (W), Opportunity (O), and Threat (T), or “SWOT” [3] was employed because of its robustness in business analysis and business problem solving demonstrated in many cases [4-6].

II. Theoretical background

A. SWOT analysis

SWOT [4] stands for strengths, weaknesses, opportunities and threats. By identifying factors under each of those four groupings, a person can be clearer in analyzing any business problem. It’s a way of setting up thinking about internal and external forces. Hence, a clearer path to an outcome can be formulated.

B. Student motivation and peer-assisted / group-based learning

Student motivation [7] is important but poorly understood issue in higher education classrooms. The most influential factor to study achievement is learning motivation whether intrinsic or extrinsic [5].

Hancock [7] presented his finding result that students, who desire to work with peers during classroom activities, thrive on (a) face-to-face interaction, (b) positive interdependence, (c) individual accountability enforced by group members, (d) need for collaborative skills, and (e) group processing inherent in the cooperative learning environment. Peer-assisted learning (referred to Topping and Ehly, 1998 in [8]) refers to obtaining knowledge or skills by way of active assistance and support from peers. The peers have equal or similar status and class, coming from the same or similar social groups. In peer-assisted learning, peers must help each other to learn.

Hancock [7] recommended that in any event, researchers should attempts to identify the specific personality and situational variables that foster graduate students’ achievement in addition to fostering their motivation to learn.

III. Methodology

Attempting to help the student, the following steps had been done.

A. *Establishing advisor-advisee interaction through TNI's advisor system and policy.*

B. *Gathering relevant data*

Gathering the data from TNI's registry system, interviewing other teachers who taught the student prior, internet search, interviewing and observing the student. The significant data revealed that he felt very lonely. His parents were too busy. His brother left to settle a business in distanced province. His close friends were dismissed from the institute. His girlfriend decided to separate with him. There was no learning motivation for him. He felt sadly and loosed his self proud. He found no direction of life. However, he always paid respect to advisor and teachers. He intended to sincere recommendations and decided to improve for getting better.

C. *Applying SWOT analysis*

S – (1) Good cognitive skill; (2) Perceiving in his good-looking physical body.

W – (1) Lonely; (2) Less motivation

O – (1) Self perception; (2) Opened mind; (3) Positive attitude to get better; (4) Still had friend(s); (5) Registration in the course conducted by his advisor; The summer course was generally small class size then it was easy to manage

T – (1) His opinion to stay separately with his parents.

D. *Determining the proposed solution*

Man:-

- Taking opportunities of (1)-(3) and solving weakness of (1)-(2), together with preventing threat of (1) by continuous, good, and sincere communication in both personal life and education aspects; Explaining risk and weak point of living separately from his family, working and studying concurrently, especially for him because he had to re-study in many withdrawn subjects.

- Taking strength of (1), opportunities of (1)-(5) and solving weakness of (1)-(2) with supporting his decision to register in the database system course in summer semester; Arranging peer-assisted group by considering individual preference; Motivating the observed student by promoting him to be a group header for keeping high responsibility and self-respect; Assigning him to be coach of a group members who need help on learning.

Method:-

- Using direct communication for taking P (plan), D (do), C (check), and A (action) to solve the problem through advisory role

- Determining learning activities, and assignments via peer-assisted group with scoring on collaboration and knowledge sharing within individual groups

- Designing assessment methods and score ratio as shown in Table II

- Reflecting phased assessment to students

- Valuing good learning behaviors and general behavior with admiration for motivation
- Setting policy for class management in order to prevent undesired general and learning behaviors
- Persuading class attendance by using opened examination that students could bring individual class-note (hand writing only) with lecturer's signature of each attending class to the examination room.

TABLE II Designed assessment methods and score ratio

Domain of Expected Learning Outcome	Assessment Methods	Ratio
Ethics, interpersonal relationship and responsibility	• Observing and reflecting student's behaviors by teacher and peer students (Both in-class and daily life in social)	10%
	• Reviewing individual student's EKIRNaCT sheet (Student's memo submitted after each class to reflect development of students' learning outcome under 5 domains: E: Ethics, K: Knowledge, I: Intellectual skill, R: interpersonal Relationship, Numerical analysis, C: Communication, and T: Technology usage)	5%
Knowledge, intellectual skill, numerical analysis, communication skill, and technology usage skill	• Considering process, outcome, report, and presentation for each group assignment (including research review, case study, and project relating to database system)	35%
	• Examinations	50%

Material:-

- Designing forms of individual class-note, self assessment and recommendation per attending time (See cover page of the form in Figure 1).

IV. Result and discussion

Result data was gathering from direct observing and interviewing, interviewing members in his group, and learning measurement and assessment. The student got better in learning behavior, personal interrelationship, and learning achievement.

- Obeyed to stay with his family and suspended to find a job during study.

- Absented once along the semester with some business reason.

- Came to classes in time.

- Took high responsibility for his role as the head of group with 5 other members, including students from 2 majors: business information technology, and computer engineering.

- Performed better learning outcome after guidance, management, and follow up (See Table III).

- Participated well with all members in his group.

- Self-respect shone on his face when he could answer questions in classes and got top score in mid-term examination.

DIRNaCT sheet

The Domain of Students' Learning Outcome Development				
1	2	3	4	5
1	1	1	1	1
Moral/Ethics	Knowledge	Intellectual skill	Interpersonal Relationship	Numerical Analysis-Communication-Technology usage

Memo of Five Learning Outcomes (Supplementary Document of INT-301 Database System in Semester 3/2011)

Learning Topic:

Student's Name: Date:

- Learning content
- Self assessment (learning behavior; questions and answers; discussion; progressive work of assignments)
- What are today's sub-topics that student has not understood? (Please provide student's questions)
- Specify factors influencing (both positive and negative) today's learning and provide some suggestions
- Additional recommendation for better learning management

Fig. 1 EKIRNaCT Sheet (Cover page)

TABLE III The student's data after guidance, management, and follow up

Semester	# of registered subjects	# of withdrawn subjects	# of subjects getting "F" because of having less than 80% attendance	GPA
3/2011	1	0	0	2.38
1/2012	5	0	0	2.53
2/2012	8	0	0	2.68

Improvement of leaning management and student's characteristics are core responsibility for all academic institutes. TNI presented integration of Thai and Japanese ways. Improvement is heart of quality management according with kaizen, a Japanese style of quality management [9] which is a continuous improvement by the small steps. Its improvements should proceed without any additional investment or through small investments. TNI policy promotes kaizen in each academic activity, including learning management for each subject. In this experiential case, kaizen had been done (under responsibility of the teacher who has been his academic advisor and also his lecturer of database system subject) for managing learning problem of the observed student. SWOT analysis, a structured planning method, was carried out for the observed student to evaluate the internal and external factors involved in his case. Peer-assisted group, teacher's role, individual learning memo per attending time,

and student's motivation could advantage to the learning problem.

V. Recommendation

Youth students have less experience; Therefore, they need family members, teachers, friends, and others to compass them. They may get trouble to face with changes. All partners including parents, teachers, and also individual students must keep together with well communication and cooperation. Behavioral problem in youths commonly occurred. Empathy, sincerity, good listening, good advice, ethical re-enforcement, and giving opportunity would help them to step well even in risk surroundings.

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