

## CHAPTER 2

### Literature Reviews

#### 2.1 Chapter Overview

There are many theories and literature that are related to the professional development. For SAOC, there is the individual difference among knowledge workers to be developed to be professional. The tools and techniques are varied with respect to the problems. The relevant theories and literatures will be discussed in this chapter. PD has great influenced on every organization. To become a recognized professional, it requires PD. Since RTAF uses the United State Air Force Development Education (USAFDE) as a pioneer model, the relevant information of USAFDE will be addressed. PME in RTAF will also be elaborated, compared and pointed out the problems related to SAOC. The famous Kolb's Experience Learning Theory that divide people into 4 types is discussed. The theory analyses their forms of learning so that they should be taught according with their styles. This is critically pertinent to the research problem. The Learning in Action of Garvin will be next explored as a complement of the Kolb's theory. This part also presents Learning Behaviors like Adult Learning in Knowles's Theory in the topic of how adult learn, how to set up the learning arrangement suitably to adult. It is considered relevant to the issue of individual difference. Since the Negative Reinforcement theory by Skinner and the Reflective Theory are related to the learning process, they are also discussed herein. By means of Five Point Reflective Scale adapted from Bain, Ballantyne, Packer & Mill, 1999, p.60 with those learning behavior, it is able to manage the learning process according to individual differences. Consequently, it will be reviewed in depth. Finally, the utility of social network as a promising instrument to realize the research solution will be addressed.

## **2.2 Professional Development (PD)**

### **2.2.1 Definition of PD**

To understand what the PD is, it is necessary to start with the PD definition and then the notion related to PD. Oxford Dictionaries (2012) give the meaning of Professional as: It is a person engaged or qualified in a profession or a person engaged in a specified activity, especially a sport, as a main paid occupation rather than as a pastime or a person competent or skilled in a particular activity. The role of PD is as follows: “PD is essential for every individual, whether employee do not. It is vital for every business and professional organization to increase the knowledge and skills of their employees. They should strive to enhance the quality of performance, to ensure an improvement on the personal and professional front (Morgan, 2007).

Accordingly PD in RTAF can be viewed as the continuing development that gives new knowledge and skills related to the job description. Those knowledge and skills are expected to increase their competency including job proficiency and professional accomplishment. PD maintains high levels of competence in order to increase ability to cope with challenges and changes, which can be used to plan their development and makes the best use of resources. The knowledge workers can have the perspectives of their careers in all aspects, which can be kept up to date with the changes in their sectors, where finally their job satisfactions are increased.

According to the basic notion and aims of PD, the information related to PD is thus crucial for its successful implementation. As a result, the information of PD will be described next.

### **2.2.2 Cycle of PD**

The cycle of PD is consisted of three steps as shown in Figure 2.1. The normal step of the cycle is as follows. First step is Reflecting. This is the reflected skill of work and the current job knowledge that can be used to improve the future works. The results from the Reflecting are used for the Planning step in order to develop and to successfully meet the goals. The next step is Doing. At this step, all activities are carried out according to the Planning. Finally, the achievement of work is counted at the

Reflecting step. Alternatively, the next cycle can start from the Planning step. The successful results are recorded for the future use.

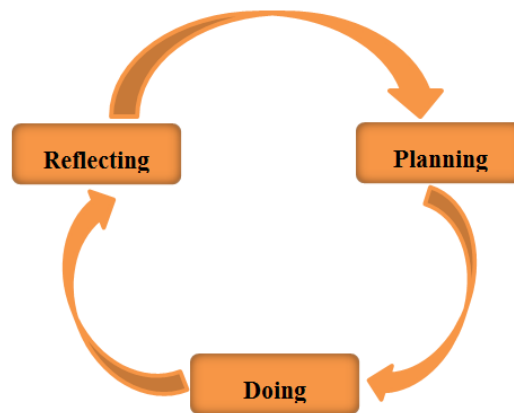


Figure 2.1 Cycle of PD (The energy institute, 2011)

### 2.2.3 Classification of 2 Typical PDs

Generally, there are two types of PD, namely education program and training program, respectively. In the education program, the knowledge workers obtain typical knowledge and ideas that can be utilized for their works. The training program makes the knowledge workers able to apply their knowledge with specialized skills.

The objective of the training implementation is to bring about the quality improvement of the trainee for different needs and ways of achievement. To implement the training, there are six methods including on-the-job training/coaching, induction/orientation, apprenticeship, demonstration, vestibule and formal training. For on-the-job training/coaching, a trainee can receive the skill and experiences on the job over time due the modification. In the induction/orientation method, the new trainee can receive the total corporate requirements like norms, ethics, values, rules and regulations, all of which is required by the current job. The new trainee is trained by the skill co-workers in the apprenticeship. According to the demonstration method, the unskilled worker is taught by skilled worker by close observation to understand the job. For the vestibule, the placement of work or organization can be done by an individual within another area.

Finally, the formal training can be done within or outside an organization. The practical and specialized skills can acquisition effect (Olaniyan and Ojo, 2008).

Generally, the continuing professional education means the professional competency improvement by engaging learners. The improvement of the application knowledge is the desired objectives. It provides a new alternative way that yields benefits to the practitioner.

### **2.3 Professional Military Education (PME) in US Air Force (USAF) and RTAF**

Since, PME in RTAF has follows the USAF Developmental Education (USAFDE) as a guideline for operating education and is integrated suitably for RTAF, the USAFDE will be discussed first (Air University Catalog, 2013).

#### **2.3.1 USAFDE**

USAFDE is purposely used for extending the knowledge and adding the understanding of the roles of air, space and cyberspace, and cyberspace power in times of peace and war. Air force education programs prepare air force personnel for the challenges across the range of military operations and are used for building professional corps. There are three core concepts in USAFDE, including education, training, and experience. The continuum of learning can lead the air force to synchronize the force achievements in their careers.

There are several USAF units that are responsible for De such as the Directorate of Force Development, Air Force Personnel Center Commander and Headquarters, and Air Education and Training Command (AETC), etc. (2012).The AETC operates the academic programs to implement DE by the Air University (AU).

The full spectrum of air force education, from the pre-commissioning to the highest levels of professional military education, both degree-granting and professional continuing education is provided by the AU.

The objectives of PME are as follows. First, the nation with personnel skills in the employment of air, space, and cyberspace power in the conduct of war and small scale contingencies is provided. Second, air force personnel with the skills and

knowledge, who progressively demand more leadership positions within the national security environment, to make strategic decisions are given. Third, for the strategic thinker development, the planners and war fighters can be leaded, managed and supervised in order to strengthen the ability and skills of AF personnel.

Principally, PME includes various curriculums for resident and non-resident programs for SOS, ACSC, and AWC, which they are all managed by AU.

The study of UASFDE finds that institutions which operate learning methods at the same as one of four higher military education in RTAF is ACSC which was employed by that SAOC as a pioneer for its learning process.

### **2.3.2 US Air Command and Staff College (ACSC)**

The ACSC curriculum is designed for developing the high levels of thinking within the context of war-fighting profession by challenging students to think critically and exercising a combination of analytical and practical tools required for field-grade officers. The officers serve in the operational-level command headquarters as staff positions. The ACSC emblem is shown in Figure 2.2. The ACSC courses emphasize the use of airpower in joint campaign planning and the operational art of war.

#### **1) Course Member Selection**

Applicants must rank at Squadron Leader or equivalent, and GS-12 and GS-13 (national Security Personnel System Permanent [NSPS] Pay Band Two and above) government civilians. A selection process is according to their respective personnel system. To be specific, qualified candidates must demonstrate their potential for task accomplishment. ACSC annually educates approximately 500 students from all US military services, selected federal agencies, and international officers from over 60 different nations.

#### **2) Course Objective**

At the end of this course, students are able to apply both military and air power theory in order to lead and command at the operational level. They are also expected to be able to integrate and employ joint forces in times of war and conflicts concerning capabilities and limitations of service. Throughout this course, students must

show that they can complete assignments at the professional level while applying researching and analytical skills in order to present important factors for the war fighter as well as defense community.

### 3) Course curriculum

The resident program consists of 10 months of graduate-level study. The course descriptions, which can be divided into 5 areas as following;

#### Area 1: Leadership and Warfare

This area provides the leadership knowledge, which is included leader role and duty in times peace and war. The learners are able to conduct the people for critical problem. The learners are also trained to be Air Force squadron leadership.

#### Area 2: International Security Study

In this area, the learners are trained to understand the international security environment including decision making process in US national strategic, studying instruments of power in both state and non state actors. Besides, the learners are able to learn the case study in five different regions, where the discussion of the role important cultures and operating skills to obtain the successful achievement. Moreover, this area also provides the field trips for all learners in both local and international locations.

#### Area 3: Air Power and Warfare

This area introduces the principle of military theories, military strategy and rang of military operation by pointing out the nature of wars, guerilla warfare, insurgency, counterinsurgency and terrorism. The learners can dedicate the various lessons for present and future problems. Besides, this area includes the lessons about Airpower, Joint Force, Joint Planning and Joint Air Operation

#### Area 4: Research/Elective

There are 2 programs for the students that can furnish their study, where they have an occasion to examine topics that they interest under

guidance of expert. This program will make them able to determine, issue briefing analysis and create well – supported fulfillment and suggestion of potential benefit to today’s war fighters.

#### Area 5: Gathering of Eagles

This area can encourage the students to participate in teaching interviews. It will make them able to understand and learn lessons about air and space leadership.

For the international officers, they attend 6 weeks for preparing the English language and they take part in the added field trips.

#### 4) Learning Activities

This course is taught mainly through seminars where online reading assignments, examinations, research and other writing requirements are also used as learning tools. Not only do students study through collaborative works, but they are also encouraged through study independently. This is supported by a computer network and the Internet, which are accessible throughout the college. In addition, students will receive approximately 80 books to expand their knowledge in the field. A personal laptop computer will also be given in order to keep record of class timetable.

#### 5) Course Assessment

In order to complete this course, students must attend 33-semester-hour program. They must achieve at least a grade of ‘C’ on each course with an overall GPA of 3.00 on a 4.00 scale. A full satisfactory class participation in other scheduled ACSC programs and activities must be demonstrated in order to achieve the degree.

### **2.3.3 PME in RTAF**

In chapter 1, the responsibility of the 4 higher education institutions are shown. In addition, the fact finding commission in higher education was shown as the following

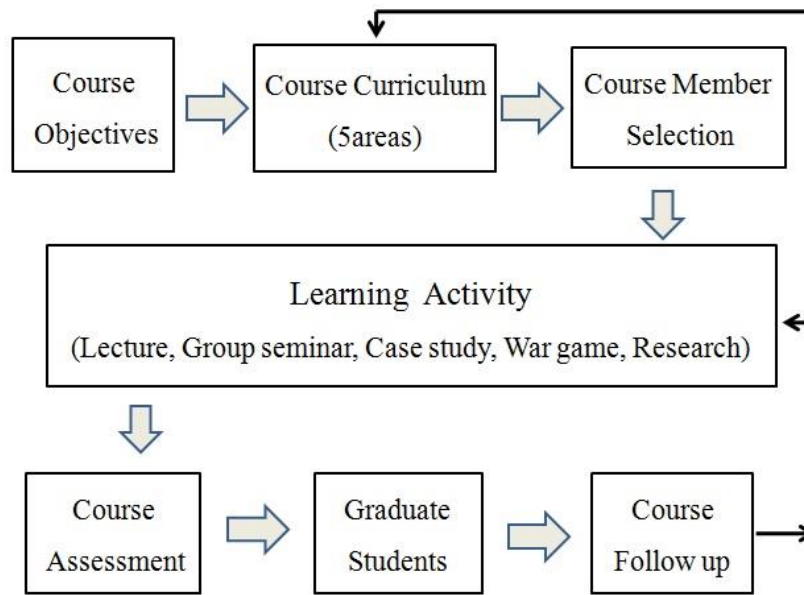


Figure 2.2 The flow chart of higher education management

1) **The SOS** course aims at ensuring that Squadron Officer candidate are able to lead and manage other officer under supervision in order to accomplish assigned tasks successfully and to realize the value of leadership and its effect upon the achievement of a mission. They must also capable of coordinating with associates efficiently and effectively and are able to work both under a teamwork environment and the government conventional standards. Upon the end of the program, the students are expected to understand and to value the importance of air power as well as possess the security and strategy fundamental. Understanding air force directing staff responsibilities and possessing the capability to solve problem and recommend commanders within principles and rationale, are also key elements of the course (Squadron Officer School, RTAF, 2011).

### 1.1) Course Member Selection

Thai armed forces officers, selected for the grade of Flying Officer or equivalent, and approved by their directing staff or supervisor, as well as the RTAF Directorate of Personnel, has declared their eligibility for enrolment into the SOS course may enrol. To be qualified for this programme, prospective students: must graduate from the Officer Training School, rank of Flight Lieutenant, and be in good health both physical and mind. Although applicants with all age are welcome, an



application form with confirmed pregnancy will not be considered. It is also important to note that applicants must be cleared for minimum classification level of “secret”.

## 1.2) Course Curriculum

The school conducts two courses annually, starting from November and April in each fiscal year. This will cover the period of study 17 weeks. The curriculum is divided to five areas as follows:

### Area 1: Leadership and Management (110 hrs.)

The objective of this area is to develop the course members to be able to lead and manage their team members within their supervision, accomplish the assigned task effectively, as well as value the existence of leadership problem solving technique and creativity skills in order to adopt it in the teamwork working environment efficiently. This area is a 110-hour course, consisting of 52 hours of lecture, 14 hours of seminars, and 44 hours of practical exercises.

### Area 2: Communication (90 hrs.)

This area is aimed to develop the course members to be able to use the communication techniques effectively according to the bureaucratic procedures in order to enhance better coordination among the members. Area 2 accounts for 90 hours, which includes 33 hours of lecture and 57 hours of practical exercises.

### Area 3: Nation Security and Strategic Studies (40 hrs.)

The focus of this area is to introduce the members to the fundamentals of national security so that they can understand and value the importance of Air Power as well as understand military strategy implementation and policy. This area takes 40 hours, consisting of 30 hours of lecture and 10 hours of seminars.

### Area 4: Directing Staff Duties and Responsibilities (72 hrs.)

This area provides the members with the directing staff duties and organization. The importance of problem solving techniques and its

report will be emphasised, enabling them to recommend to the staff effectively and correspondingly. There is a total of 72 hours, which includes 28 hours of lecture, 10 hours of seminars and 34 hours of practical exercises.

#### Area 5: Extra-Curricular Activities (294 hrs.)

Beside theory in activities, the members will be provided with knowledge such as visits to successful companies as well as other non-profit organizations, covering areas not relating to military. Individual learning skill will be strengthened through team build-up activities. This area comprises 294 hours; 62 hours of lecture, 162 hours of practical exercises and 70 hours of the visits.

The five areas are concluded to 81 working days or 17 weeks, excluding 33 hours of night training and 1 official day or 7 hours of during the visit. The course accounts for 606 hours; consisting of 205 hours of lectures, 34 hours of seminars, 297 hours of practical exercises and 70 hours of the visits.

#### 1.3) Learning Activities

In-course activities include lecture and opinion in classroom, self-study activities such as researching in eBook, library and the Internet, groups learning, and role-play.

#### 1.4) Course Assessment

The evaluation criteria comprises of theories and practices, accounts for 35 and 65 %, respectively. Graduates of the SOS will receive a certificate and insignia named “Napapitak”.

2) ACSC course is designed to achieve the following objectives. First, it is to improve students’ knowledge and abilities as a commander and staff officer, with full vision of leadership. Second, it is to prepare the students to assume future command and leadership responsibilities as capable staff officers in any RTAF organization at wing level. Third, it is to provide students an understanding of National Strategy and National Security Policy, and the ability to apply this understanding as a tool to enhance military planning. Fourth, it is to prepare the future leaders for the execution and with

the understanding of the air campaign planning process and of the air operations at tactical and operational levels (Air Command and Staff College, RTAF, 2011).

### 2.1) Course Member Selection

The Royal Thai Air Force Board of Education (RTAFBE) selects outstanding individuals from various parts of the RTAF organization on the basis of a human resource requirement for each fiscal year. To be qualified for this course, ACSC candidates must rank of Squadron Leader to Wing Commander or equivalent, not age over 40 years old, and graduate from the Squadron Officer School or equivalent. Applicants must also have minimum standard education of Bachelor Degree, be in good health, and be cleared for minimum classification level of “Secret”.

### 2.2) Course Curriculum

The college conducts only one course annually. The course normally starts from October and finishes in September of the following year. As such, each year of study accounts for 48 weeks. The curriculum is divided into five areas as follow:

#### Area 1: Leadership and Management

The objective of this area is to develop the course members to be skilful in Command, Leadership, Management and Decision Making Analysis and be able to apply knowledge appropriately including potential readiness for academic learning. The course members will be introduced to essential tools such as Basic Skills Learning, Leadership, Management, Innovation Management and Research Methodology. This area comprises 309 hours; consisting of 145 hours of lectures, 10 hours of seminars, and 154 hours of practical exercises.

#### Area 2: National Security and Strategic Studies

The objective of this area is to introduce course members to a range of national and international issues in our contemporary environment; and to understand National Security, National Strategy, National Policy, Instruments of National Power, National Resources and International Relations. Area 2

comprises 164 hours, consisting of 122 hours of lectures, 22 hours of seminars, and 20 hours of practical exercises.

### Area 3: Military Studies

The objective of this area is to establish a greater understanding of Military History, Principals of War, Air Campaign Planning, Air Power Concepts, Air Operations, Air Defence Systems, Joint Warfare, Military Technologies, Air Weapon Application Planning, Air-Land Battle, Electronic Warfare and familiarization with the Armed Forces capabilities. This area takes 228 hours, which includes 152 hours of lectures 24 hours of seminars, and 52 hours of practical exercises.

### Area 4: Staff Studies

The objective of this area is to encourage the course members to understand the function of staff duties including the problem-solving process, and to emphasize the value and importance of effective staff systems and efficient staff work. Accordingly, course members work on joint military planning activities and verify the results during the conduct of a joint-exercise between the three defence staff colleges at the end of the course, the trainees apply Joint Theatre Level Simulation to indicate their abilities in this area. The knowledge and experiences gained from Area 1, 2, 3 are consolidated during these activities. This area accounts for 442 hours, consisting 121 hours of lectures, 102 hours of seminars, and 219 hours of practical exercises.

### Area 5: Additional Activities

The objective of this area is to broaden the student experience and exposure in topics such as Politics, Economics, Military Knowledge, Social Psychology, Science and Technology. This is achieved using field trips, unit visits, educational cooperation exercises, and from briefing opportunities by guest speakers. Activities include social and sporting activities, involving exercises in order to enhance and fulfil the character and capability requirement of effective commanders and staff officers. Area 5 comprises 700 hours; which divided into 58

hours of lectures, 28 hours of seminars, 246 hours of practical exercises and including visiting 368 hours.

### 2.3) Learning Activities

The course is conducted primarily through the application of three dimensions in adult learning as follows:

#### 2.3.1) Presentation

This consists of lecture methods such as formal and informal lectures, briefings, and visits by guest lecturers to supply information in an area where the Directing Staff are not expert; and indirect method of discourse such as forums or panel discussions.

#### 2.3.2) Verbally Interactive Discussion

This is normally applied through the use of seminars and guided discussions that allow students to interact verbally with directing staff, group leaders and other course members. This also encourages course members to learn about a topic more deeply by actively sharing ideas, knowledge and opinions in a group environment.

#### 2.3.3) Application

The course members are provided with opportunities to apply previously learned theory and study material in practical situations. Students are normally scheduled to deal with material from subjects already learned, including case studies and real-life situations where they work together to resolve problems, achieve solutions and educational objectives. In addition, individual work comprises reading, writing, and speaking. An important application component of the ACSC is the completion of a major research paper on a topic related to areas of course study.

### 2.4) Course Assessment

The course members are required to pass the assessment in the following areas:

#### 2.4.1) Academic Evaluation

This includes aspects of class attendance, participation in planning exercises and performance in examinations. The examination is divided into writing, presentations, and oral expression.

#### 2.4.2) Personality Evaluation

A staff committee will observe course members with regards to the following aspects: discipline, behaviour, personal characteristics, habit, social manners, leadership, initiative they will to work, equitable judgment, and physical health. The resulting evaluation is then reported respectively to the Commander in Chief of the Royal Thai Air Force, and to be used as a part of decision-making process by the Air Force Promotion Board and when determining the future postings of course graduates.

#### 2.4.3) Comprehensive Test

The aim of the Comprehensive Test is to evaluate course members' development of the knowledge and attitude. An evaluation committee will conduct the comprehensive test at the end of the course, including a written test and advanced interview assessment. Any course member who are not able to pass the first individual interview, are allowed to retest for another interview. Graduates of the ACSC will receive a certificate and insignia named "Napatipat".

**3) AWC** course aims at enhancing the ability of the course members to become strategic leaders with integrity and morality as well as to become efficient directing staff in terms of force preparation and force employment. They must be able to plan joint strategic military operations and realize the role of the RTAF in national security (Air War College, RTAF, 2011).

#### 3.1) Course Member Selection

The RTAF selects outstanding individuals from various part of RTAF organization on the basis of human resource requirement for each fiscal year. The standard qualifications for AWC candidates are as follows: 1) the candidate must rank of Group Captain (Colonel Equivalent) or Special Group Captain; 2) they must age

no more than 50 years old; 3) they must graduate from ACSC, SAOC or equivalent; 4) the minimum standard of education is Bachelor Degree; 5) they must be in good health, and 6) they are cleared for minimum classification level of “secret”.

### 3.2) Course Curriculum

This course will take up to 48 weeks in which there are 5 areas to be covered in this course:

Area 1: National Security and Security Strategy (9 credits); this area comprise of 3 blocks as follow;

Block 1: Security Environment; this block provide course members with understanding of international relations, international organizations, non-governmental organizations, geopolitics, regional studies, and non-traditional threats in order to accurately analyze the security environment.

Block 2: Strategies; this block provide course members with an understanding of the formulation of strategies in order to accurately evaluate the strategies.

Block 3: National Decision-Making Process; this block provide course members with an understanding of national power and instruments of national power; policies relevant to decision making; and factors affecting national decision making in order to efficiently analyze the national decision making process

Area 2: Military Studies (11 credits); this area comprise of 3 blocks as follow;

Block 1: Military Theory and Operations; this block provide course members with knowledge about military theory and operations as well as military technology at the strategic level and enable them to integrate and apply the knowledge properly.

Block 2: Military Forces Employment; this block provide course members with knowledge in respect of planning the employment of military forces in joint/combined operations

Block 3: Military Capability; this block enable course members to understand the components of military capability development and apply them as guidelines on accurate military strategy formulation

Area 3: Strategic Leadership (7 credits); this area comprise of 3 blocks as follow;

Block 1: Leadership Theories; this block enable course members to understand the basic principles of leadership, strategic leaders, leaders in the information age, military leaders, and leadership in crisis situations and apply them as guidelines to synthesize characteristics of strategic leaders in different situations.

Block 2: Tools of Leader; this block provide course members with an understanding of tools for situation analysis; negotiation; coordination; media relation management; problem solving; decision making; counseling; and psychology of strategic leaders and apply them as guidelines on an efficient analysis of tools of leadership.

Block 3: Organizational Leadership: this block provide course members with an understanding of leading change, establishing and developing organizational culture; formulating visions and strategic management; implementing strategy; organizational communication; measuring organizational success; knowledge management and learning organizations; and prioritization and apply them as guidelines on an accurate evaluation of organization success factor.

Area 4: Research Papers (3 credits); this area provide course member to be able to synthesize bodies of knowledge to enhance the development of organizations/ the armed forces through research paper writing.

Area 5: Activities and Orientation (7 credits); this area comprise of 2 blocks as follow;

Block 1: Academic Activities; course members are prepared for studying and are skilled at organizing activities interacting with other academic institutes from other armed forces.



Block 2: Security Study & Field Trips; this block provide course members learn from direct experience and expand their visions from field trips. Course members can also efficiently apply their knowledge to their organizations.

### 3.3) Learning Activities

There are seven activities to be included in this course, which are lecture, group seminar, workshop/case study, field trip, research based learning, academic presentation, and war game at strategic level. At the end of the curriculum, students have to applied knowledge obtained throughout the year to solve nation crisis (in the scenario that created by faculties). The students will be divided to be each national instrument of power (include Military Power) and plan to provide options to the government.

3.4) Course Assessment; the students will be evaluated by both academic and personal dimension. Graduates of the AWC will receive a certificate and insignia named “Napayatipat”.

**4) SAOC** course aims at training executive and basic staff function, which is essential for the division level. This curriculum is developed from ACSC for the supporting candidates and non-combating candidates (Senior Air Officer College, RTAF, 2011).

### 4.1) Course Member Selection

The fixations of qualified students who will be admitted to SAOC are different in many ways such as they are not the same age about from 38 to 54. The basic of education is not the same level, as well. Their ranging is from undergraduate to Ph.D. Additionally, they are military personal ranking from Squadron Leader to Wing Commander, participating in peace support operations (or PS's) in various areas of the RTAF.

### 4.2) Course Curriculum

The course is comprised of 5 foundation areas in curriculum and course duration is about 23 weeks, October to March and April to September. There are 80 students per a course. The five areas will be discussed as follows.

### Area 1: Leadership and Management

The objective of this area is to develop the course members to be skillful in Command, Leadership, and Strategic Management and able to apply knowledge appropriately including potential readiness for academic learning. The course members will be introduced to essential tools such as basic skills learning, Leadership and Management. Area 1 comprises of 139 hours, consisting of 78 hour of lecture, 5 hour of seminars and 56 hours of practical exercises.

### Area 2: National Security and Strategy

The objective of this area is to introduce course members to a range of national and international issues in our contemporary environment and to understand National Security, National Strategy, National Policy, Instruments of National Power, National Resources and International Relations. Area 2 comprises of 80 hours, has 57 hours of lecture, 15 hours of seminars and 8 hours of practical exercises.

### Area 3: Military Studies

The objective of this area is to establish understanding of Military History, Principle of War, Air Power Concepts, Air Operation, Air Defense System, Joint Warfare, Military Technology and Electronic Warfare. Area 3 comprises of 80 hours, has 53 hours of lecture, 7 hours of seminars and 20 hours of practical exercises.

### Area 4: Staff Studies

The objective of this area is to encourage the course members to understand the function of staff duties including the problem-solving processes and to emphasize the value and importance of effective staff systems and efficient staff work. The knowledge and experiences gains from Area 1,2 and 3 are consolidated during these activities just as make exercises, practice staff duties and play games concerned with executive in administering. Area 4 consists of 144 hours, has 52 hours of lecture, 20 hours of seminars and 72 hours of practical exercises.

## Area 5: Additional Activities

The objective of this area is to broaden the course members experience and exposure in topics such as Politics, Economics, Military Knowledge, Social Psychology, Science and Technology. This is achieved using field trips and international field trip, unit visit and from briefing opportunities by guest speakers. This includes social and sporting activities, which involves exercises to enhance and fulfill the character and capability requirement of effective commanders and staff officer. Area 5 contains 339 hours, has 43 hours of lecture, 8 hours of seminars and 286 hours of practical exercises.

### 4.3) Learning Activities

Learning Activities include lecture, group seminar, workshop/ case study, field trip, individual study, academic presentation, paper report, and examination.

### 4.4) Course Assessment

The course members are required to pass the assessment in the following areas;

#### 4.4.1) Academic Evaluation

This included aspects of class attendance, participation in planning exercises and performance in examinations. The examination is divided into writing and presentation.

#### 4.4.2) Personality Evaluation

A staff committee will observe course members in the following aspects; discipline, behavior, personal characteristic, habit, social manners, leadership, initiative, equitable judgment and physical health. The resulting evaluation is then reported respectively to the Commander in Chief of RTAF in order to be used as a part of decision making process and determining the future positions of course graduates by the Air Promotion Board. Graduates of the SAOC will receive a certificate and insignia named “Napapiwut”.

In conclusion, the former literature shows that the most individual differences of the qualified SAOC students brought the problem of learning process manipulation to students learning outcome achievements.

## 2.4 Experiential Learning Theory

The term of “*Experiential*” is used to differentiate ELT both from cognitive learning theories that refuse any role for subject experience in learning process. According to Kolb: “*The process whereby knowledge is created through the transformation of experience, knowledge results from the combination of grasping and transforming experience* (Kolb, 1984).”

### 2.4.1 The Experiential Learning Cycle and Basic Learning Styles

The ELT model is the learning by experience, where the difference learners have the difference learning styles, which means that learning can be performed by concrete experience (CE), Reflective Observation (RO), Abstract Conceptualization (AC) – and Active Experimentation (AE). Kolb proposed two-axis based learning, where they are perception continuum (how we think or feel about it) and processing continuum (how we approach a task), which is presented by the four quadrants as shown in figure 2.7.

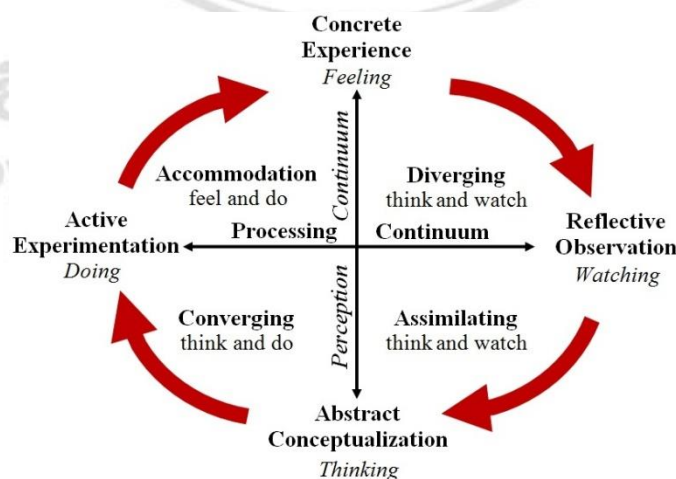


Figure 2.3 Experiential Learning Cycle and Basic Learning Styles (Kolb, 1984)

Figure 2.3 shows the four learning styles which is described in details.

**Diverging:** The diverging style's learning abilities are the Concrete Experience (CE) and Reflective Observation (RO), which can provide the capability of perception and imagination and viewing concrete situations and be used to brainstorm and performed well among people. They prefer to work in groups, listen with an open mind and tend to be strong in the arts.

**Assimilating:** The assimilating style's learning abilities are the Abstract Conceptualization (AC) and Reflective Observation (RO), which can provide the capability of concise, logical approach and interesting in theory. They are the best understanding wide-ranging information, more interested in ideas and abstract concepts than practical and less focus on people. Generally, they prefer to read, lecture and explore the analytic model, which have time to think.

**Converging:** The converging style's learning abilities are the Abstract Conceptualization (AC) and Active Experimentation (AE), which can provide the capability of problems solving and make discussion by finding solution to practical issues. They prefer to experiment with new ideas, more appeal to technical task than interpersonal to people.

**Accommodating:** The accommodating style's learning abilities are the Concrete Experience (CE) and Active Experimentation (AE), which can provide the capability of taking a practical and more appeal to new challenges and experience. They prefer to act on "gut" instinct rather than logical analysis, work in teams to complete task and rely on people for information than carry out their own analysis. They are able to plan, set objective, do field work and test difference ways to achieve goal.

According to Kolb learning styles, there are factors that shape and influence Learning Styles which is interpreted learning style as personality variable (Garner 2000; Furnam et al., 1999). These are personality types, educational specialization, professional career, current job role, and adaptive competencies. For examples, the people with each learning style can have different behavior levels. The diverger and converger with

professional career like social service or arts and engineer or medicine respectively. Assimilator and accommodator with professional career like science or researcher and social service or educator respectively.

Harmonizing with Kolb Theory, the use of student learning styles for supporting the distance learning in which the learning activities by computer manipulation such as conference, e-mail, and telephone communication are crucial (Ally and Fahy 2005). They studied in two courses. The result shows that the students who were Assimilator needed the most assistant in distance education course. They preferred interplaying with instructor rather than other students. For accommodator and diverger, they needed less support, tended to depend on other students and people outside the course. Divergers were less activity and stained to share their ideas. On the other hand, convergers liked to share opinion the most. The study can confirm the Kolb learning style and certify that the distance learning is sufficient for students who were various learning styles.

It is concluded that Learning Style Inventory remains one of the most influential and widely distributed instruments used to measure individual difference preference. (Christopher Kayes, 2005).

The other related review to the Kolb Learning Style Theory is studied by Julie E Sharp (Sharp, 2001). The author utilized the Kolb learning style theory in the technical communication in engineering classroom and practiced teamwork skill to them. The most style of the engineer students were converger and assimilator as followings. There were a small number of accommodators and divergers. The data is correlated with the professional careers of converger which are engineers (Garner 2000; Furnam et al., 1999). When she used groups learning activity for problem solving exercise, it was not good result. Groups working were not a favorite technique for converger and assimilator. By using the Kolb theory, it was shown that the improvement of student teamwork by recognizing and capitalizing on their strengths, respecting all styles, sending messages in various ways could be improved by the different analyzing styles, which could be used to resolve conflict and communicate effectively with team members.

## 2.4.2 Roles of the Teacher According to learning styles

In learning activity, the role of teacher is importance device to approach the students in classroom. It is found that teachers have developed a range of personal methods of identifying individual and group learning styles and techniques to respond to them (Smith and Dalton, 2005).

The roles of the teacher according to Kolb's learning styles that teacher (instructor) must modify the teaching style to be suitable for student learning styles, where they are four types as followings (Dede, 2011).

1) The teacher's role according to diverging learning style, teacher determines the attractive vision, bring clarity to any ambiguity, convey vision to all students and give confident to students to reach objectives.

2) The teacher's role according to assimilator learning style, teacher allows the students to analyze and inclusive, prepare the class for discussion and brainstorming. In this case, the teacher must be a very knowledge and expert.

3) The teacher's role according to converging learning style, the teacher is a good coach. He can explain the target clearly to students such as give them encouraging the successful direction without fear making mistake. Teacher gives confidence to students and motivates the unsuccessful students.

4) The teacher's role according to accommodator learning style, teacher must use his influence more than authority. He must observe students activity in groups learning and give them reinforcement for new practical and discoveries where the value and their commitment should be maintained.

There are many researchers that agree with Kolb theory in term of teaching style (Alias and Norsuzana, 2008; Neher et al., 1992; Irby, 1995). Moreover, it is reported that either matching or mismatching of teaching and learning styles were influenced the learning outcomes, where the maturity of learners depend on the observed effects (Ford and Chen, 2001). The highly motivated and maturity learners were needed to match the

teaching and learning style, which was appeared to be more prominent among developmental students.

On the other hand, there are many studies in other points of views with the above reviews in terms of congruence and incongruence between the learning and teaching style, which are presented as the following research works.

It is explained that learning styles, teaching styles match or mismatch between learning and teaching styles, visual, auditory, and kinesthetic learning styles among Iranian learners (Gilakjani, 2012). While the benefits of the matching of teaching style and learning style is certain, the way did not assured the learning achievement. There were the other factors that influenced the learner improvement such as age, education level and motivation. However, he gave more conclusions that the teachers needed to know the individual learning style of students and their necessary requirement eventually could increase educational success. Even though, the learning styles gave the huge teacher opportunities for setting the effective learning environment, learning styles by themselves did not guarantee a good learning and teaching environment. The learning styles cannot use to solve the problem of resourcing, motivation, and standards in education. To find the best ways for both students to learn effectively and teachers to teach efficiently is the purpose of learning styles in the university.

It is another research work that was reported the interesting point of views. It is claimed that the student learning styles could be aligned to fit with the instructor teaching styles (Spoon and Schell, 1998). They were four objectives where they are, (1) the description of student perceived learning style and teacher teaching styles in adult basic skill classes, (2) the determining of the selected demographic variable influence including age, ethnicity and gender on learning and their interactions, (3) the description of the level of congruence and incongruence between students participations learning and teaching styles, (4) the comparison of the achievement level among participations who experienced instruction that was congruent and incongruence with their perceived learning styles. The results could be concluded as following details, (1) the result was consistent with the research of the former work, where the student preference for learning and teaching styles were related either age group or gender. Further, the student age influenced the learning styles, especially, the adults who were facing career



obsolescence, (2) this factor should be considered that the teacher education programs were more transient than previously participated and should be reformed, (3) These preliminary findings suggested that the concept of learning style was possibly more transient than and often portrayed in their work, (4) the important implications for the education of vocational teachers would arise should subsequent research support these preliminary findings, where the learning styles influenced the learning contents, learning tools and learning situations.

The learning style in various disciplines and teaching experiences, where they discovered that the learning styles was supported, the teacher will approach to teach and accept the impact on teaching approached of all faculty (Montgomery and Groat, 1998). They studied many theories about the importance of why incorporate understanding of learning style in their teaching and collected the learning style models of the four experts as Myers-Brigg, Kolb, Felder-Silverman and Grasha- Riechmann, where they presented that the comparison studied lead the implication for teaching. The conclusions were shown that the faculty should begin with the self-reflective about their goal and strength in teaching at first. The second was concerned that neither learning nor teaching styles were unchangeable. However, they could modify for various purposes in the difference classroom contexts and teaching styles that might be benefit and boarder expand their learning achievement. Besides, the overall conclusions were matching teaching style with the learning style, which was not the summit that solved all conflicts in the classrooms. The other factors were influenced the quality of learning, where they were classroom atmosphere, former background, motivation gender and cross cultures.

However, SAOC qualified students are the individual difference and various learning styles, which are difficult for instructors to adopt teaching styles for them in class. The instructional style are outgrowths of many factors, such as personality type, preference learning style,...social interaction theory and instructional theory (Rowley et al., 1997). Moreover, from the Indiana University Teaching Handbook (Crow, 1980) it is mentioned about the preparing to teach which can be concluded that the teachers tend to use their best learning experience in the past to prepare their teaching styles.

The teaching styles which can be divided into 4 categories as follows (Grasha, 1996).

**Formal Authority** pointed out that the instructor contents could be managed purely by herself / himself, which can be called an instructor center.

**Demonstrator** addressed the students the academic procedure by completely explaining the algorithm. The instructor gave the conditions to students which could improved the student outcomes by observation.

**Facilitator** approached the student center activities that the instructional strategy was aimed into the group activities. The student interactive activities are designed by the instructor assignment to solve the problem.

**Delegator** addressed the designed classroom learning for students to execute their own complex learning project of the individual or group base learning. The exercises were arranged by the instructor, where the instructors acted as the consultative role, in which many options could be selected.

More recently, it was reported that there are other facilitator styles and called the authoritarian democratic and laissez-faire, which is found that all three of facilitator styles are different teacher approaches in facilitating situations, for instance, organization of meeting, choice of objective, choice of procedures, group relations, participation and evaluation, where the details are given in the followings (Conseil De L' Education Medical DU Quebec, 2014).

**Authoritarian;** when the teacher organizes the meeting, she/he arranges all things without discussion, presents the objective to the group, follow it without fail. If the disagreement is found, she/he imposes her/his approach. She/he informs the group about the procedures and prohibits any deviation. For the group relationship, the group member focuses on the facilitator which is one-way of communication. In group participation, the facilitator directs everything, which is no sense of initiative created. The facilitator avoids the evaluation because he doesn't want her/his role and attitudes questioned.

**Democratic;** when the teacher organizes the meeting, she/he arranges some things and discusses the potential of improvements. She/he asks the group to review objective and helps them make and inform the decision. She/he proposes a range of procedures and

solicits the others. She/he helps the group make and maintains the choices. For the group relationship, the multiple-channel communications are come from the facilitator to member and among member. The atmosphere is full of trusty, where both facilitator and member play their roles, where each member has their job and responsibilities in participation. The evaluation is important since it helps her/him improve.

**Laissez-faire;** when the teacher organizes the meeting, she/he arranges nothing except venue and provides a general overview of the objective and then lets the group do what they need. She/he does not have the defined procedure, where the group leaders choose their own procedures. For the group relationship, cliques are formed, some isolated members, meetings get bogged down. With the facilitator's laissez-faire attitude, some members take control while others remain passive in participation. She/he doesn't work the learning outcome evaluation.

It is found that all four of teaching styles give the different teacher approaching methods where the instructional styles are the product of many factors. These include the personality type, the preferred learning style, the social interaction theory, and the instructional theory which is found in the Indiana University Teaching Handbook.

Since the Kolb theory is dominant in the evaluation of learning style, it is the most suitable tool for identifying the individual difference among learners. The results from the identification of the individual difference also provide the guideline of learning approach, for example the negative reinforcement that will improve the learning. Besides, the Kolb theory can be applied for identifying the learning styles of the learners and the teaching styles of the teachers so that the mismatch problem is resolved. Consequently, the Kolb theory will be employed for the above mentioned purposes in this research.

## **2.5 Learning in Action Theory**

Learning in action is grounded in the inquiry–reflection process. Knowing in action is tacit and opens up outcomes that are in the experiences as normal. Reflection in action occurs during the action and questioning in what are being done and the environment. The outcome is thus immediate as it leads to an on-the-spot adjustment of the action.

The learning-in-action is therefore suitable for the context of this research according to its described nature. A set of instructions of a tool or technique for applying in real organization the equipment, a list of supporting steps and activities and the challenge of leading learning can be categorized to be 4 types (Garvin, 2000).

### **2.5.1 Intelligence Learning**

Intelligence is the approach of selecting, collecting, interpreting, and distributing strategic information. Information can be gathered in three ways: through search, inquiry, or observation. Search relies on public diverse sources or documents. Inquiry rely interviews or surveys and observation relies on direct contacts with influenced users.

### **2.5.2 Experience Learning**

The learning rate of learning and experience curves is uniformed in products, processes, firms and industries. Learning from experience is an importance activity that can develop the organization, where the reflected knowledge from experience learning is simply to transfer. The organization can reflect their experience and often review instantly to the lesson of achievement because of the new data and the memories can be confirmed.

### **2.5.3 Experimentation Learning**

The learning is directed by modified the restriction of results and new conclusions are sketched. There are two categories of experimentation learning, exploratory experiments and hypothesis-testing experiments. Exploration can be done by prove-learn-process or demonstration projects. However, the hypothesis testing is quite different from the exploration because it is rather deductive.

### **2.5.4 Leading Learning**

The leading learning is recognized that the leaders are different from managers. They practice to create an opportunity for the subordinate to lead them to learn such as learning by solving problem and grouping participation, questions and answers, and assign the appropriate duty, open mind and share the knowledge and experience together. Besides, the leader can create the learning atmosphere, find out and

try to seek the cause of problem together.

Garvin stated that “*Learning is different from Teaching*”. The successful of teaching is measured by students know “*learn how to learn*”, which was pointed out by the teacher. Leader came to be responsible for the environmental probe construction for insights and deeper thinking and settings, where the students can collect, interpret and apply information. If the organization is without individual learning, thus, it is not learning organizations.

Leading Learning, one category of The Learning in Action Theory, is used to explore in the framework. The main problem groups of SAOC students are wide range of experience learners. The learning activity will arrange in group based learning. They will lead and share the experience in problem solving exercises.

## **2.6 Adult Learning Theory**

Knowles (1913 - 1997) was the Executive Director of the Adult Education Association of the United States of America. He interested in the relation of age and the informal adult education. The relation of skill in human has to be learned. It can learn in other place and method. For example, learn in school, at home, on the job. Moreover, they can be learned in group or individual. The attitudes and opinions are formed primarily in study groups, work groups, and play groups, where the adults affiliate voluntarily. Knowles state that adult learning should produce at least these outcomes as follow;

2.6.1 “Adults should acquire a mature understanding of themselves.” They should know what their needs, motivations, interests, capacities, and goals. They can consider their objective and maturely believe themselves for what they are, while they seriously attempt to become better.

2.6.2 “Adults should develop an attitude of acceptance, love, and respect toward others.” They have to differentiate learning in the middle of people and ideas, and invite to contest ideas without bluff people.

2.6.3 “Adults should develop a dynamic attitude toward life.” They are able to believe the truth and usually change their think. They also become skillful by learning and considering from every experience.

2.6.4 “Adults should learn to react to the causes which is not the symptom of behavior.”They are able to solve the problem lying in their causes, which is not their symptom. Apart from human relationship learning application, the lesson in the physical world can be applied.

2.6.5 “Adults should acquire the skills necessary to achieve the potentials of their personalities.” They are able to prosperity by conducting themselves and requiring many skills to reach the goal of education.

2.6.6 “Adults should understand the essential values of human experience capital.” They are well-known with the legacy of knowledge which they live. They also believe and esteem the bind men values together.

2.6.7 “Adults should understand their society and should be skillful in directing social change.” They are able to make a decision that influence their social order and smartly join to them.

Knowles’ andragogy was allowed on the four importance assumptions that are difference between adult and child learners as follow; “Self-concept, Experience, Readiness to learn, Orientation to learning and Motivation to learn.”These can conclude that because of the maturity then adult have self-concept, experience, readiness to increase their learning include orientation and motivation to learn.

It is concluded that the ability that obstacle cause which be concern to teach the old adult patient such as vision change, hearing change except intellectual ability (Cornett, 2006). The intelligence which the elderly absorb during their life was able to help them to learn faster than the youth if learning need information to obtain in the past. Besides, she suggested the way to approach them as before inform the new thing, search for the previously learned that they could remember.

For this reason, the instructor adds the new information on their foundation of interests and understanding already in the place which relate to the work by Sadullah and Dede

(Sadullah and Dede, 2009). The instructor needs to know the class's student very well and know the learning strategy to use in the situation.

The andragogy is a suitable learning approach in the present research context because it is designed for the organization situations where self-directed learners are supported.

## **2.7 Individual Difference**

The individual differences are psychological traits or chronic tendencies that “convey a sense of consistency, internal causality and personal distinctiveness (Carver and Scheier, 2000). There were the different views from several experts that considered to the variables of individual differences in education, where the educators could adapt the instructional tools to accommodate them. The details are as follows (Hannum, 2010).

It is suggested that the individual difference among learners came from the fact that each learner come from the various environments (Skinner, 1953). Considering a positive reinforcement, it might not promote the positive learning behavior. Their learning behavior was specific reinforces for each individual. The teachers must analyze the student behavior level, construct an environment that allowed for various rates of progression to fit the individual student that needed, observed each student closely and immediately feedback for each student's progress. Up to the teacher ability to monitor the many students, the author presented the use of computer-assisted instruction (CAI) to display the information and give the immediate feedback to students.

The various individual differences come from mastery of specific essential skill, which needed the teacher to access the student abilities and skills to define each student's position within the learning level in order to crate the instructional tool by the learning tasks (Gagne, 1967). The author presented the ways to construct the instructional tool by manage the initial assessment of intellectual skills that permitted the learner to start in different point and progress through the lesson at their own rate.

The individual difference comes from the cognitive structure or a mental map of existing knowledge, which could acquire more knowledge if the new information was significant whereby the facilitating assumption into the existing cognitive structure

(Ausubel, 1978). He presented the ways to construct the instructional tool as Gagne and used different samples analogies and allegorical that was high significant to the individual difference students.

The individual difference came from the individual cognitive structure which built prior learning experiences and learning task (Bruner, 1987, 1990). He also believed that the individual difference had the ability to obtain the knowledge and learned best through a process of discovery. The author divided an individual's cognitive ability into three stages: enactive used of operative, iconic used of visual images, and symbolic used of language and reasoning, which adjusted the curriculum and instructional tool based on the individual difference student's interests such as match the themes, reconstruct and revisit the curriculum while concurrently the various mode of learning and pace to meet an individual difference student needs.

The individual differences were the superior caused from the Zone of Proximal Development (ZPD), which defined as the difference ability to solve the problem between the independent and the assistance (Vygotsky, 1978). The author kept up the social interaction with a more knowledgeable person that was critical for cognitive development, which assisted the children to reach the higher level of development than able to be alone achievement that adult also should platform the instructional tool by adapting the level of their assistance in response to the child's performance. Moreover, the author believed that the individual difference was attributed to culture, which stated that the learning connections were mentioned at the individual level. The culture plays an essential role in cognitive development, which should be incorporated during instruction. In conclusion, the student's potential by facilitating problem solving in a social context should focus more by educators.

It is concluded that there were five factors that affected to attorney result improvement, which were motivation, focus, measurement, follow-up and individual difference (Hassett, 2006). It is discussed as follows:

The motivation of success was the most important factors which the people selected to participate for any program. For the law firms, when started the new program was considered with the motivations. If the pilot group was success in new business, the



coach must support them not only be the expert but also as the leader, could esteem to celebrate their success and gave them leading the practitioner to move forward and meet the certain barriers. Moreover, the feedback was necessary to provide the individual's activity and results, which reported on the group achievement of group failure to learn and gain the effective of success.

Focus was the important factors for the attorney because they had little time for business development, so the most comfortable program concentrated on how to develop the potential of new work within the existing clients that presented excluding the complexity of the other tools.

Measurement was the tool for behavior change determination and results. The author explained in his book "*Legal Business Development: A Step by Step Guide*" where the law firms could be consider such measures as time spent, the suitable of coaching program for goals and culture and the simplicity of program usage.

Follow-up was the greatest contributions of any coach factors that could increase the successful coaching, where the coach gave the reports and results of each person in the business development group, where the constructed responsibility and subtle group constraint.

Individual Differences was one of the factors that the coach must be focused and created the program to build on the individual difference lawyer practitioners. Due to the individual difference must be specialized in what they do it best, where the coach could adjust the suitable program to help each person to mention their personal strengths.

In conclusion of the paper, sales professional had essentially developed in improving and coaching techniques. The professional development of the Legal business could expand their successful by utilizing started with the five critical factors, motivations, focuses, measurements, follow-up, individual differences.

Next, the use of individual difference in SAOC will be discussed.

The various situations in different aspects of organizational practices are responsible the individual different moderation (Glass and Muthu, 1999). The new knowledge could be

created and generated by the higher education values. The individual difference were developed by adopt a constructivist and inclusive philosophy which independence in any stems approach. The most effective approach would be to adopt the constructivist and therefore inclusive philosophy is adopted by the most effective approach, which is allowed to complete freedom in approaching any system in order to facilitate the full range development of individual differences.

Cognitive ability, cognitive style and the big five dimensions may major roles such as personal need for structure, personal fear of invalidity, need for cognition, conscientiousness and openness to experience (Thompson, 2008). Several reports were concluded that the individual difference can response the different behaviors (Robertson & Callinan, 1998; Larson, 1989). In addition the cognitive style and social factors can be motivated by the affective individual differences (Hifhill et al., 2005).

It is found that the learning process by simulation tool may effected the various learning outcome in individual difference students (Liu et al., 2008).

Since the learners in SOAC are of different backgrounds, it is necessary to consider the issue of individual difference in order to check its effects on the leaning process and effectiveness.

## **2.8 Reinforcement Theory**

In 1948, Reinforcement was discovered by Burrhus Frederic Skinner (Skinner, 1948) in terms of Operant Conditioning. He defined the meaning of reinforcement as the stimulation tools which reacted to the behavior changes. The reactions comprised the three categories as neutral operant, reinforcing and punishing. In this research work, we are interested in only the reinforcement, which can be divided into two types as positive and negative reinforcements.

Positive reinforcements were the reword that can stimulate persons who gave satisfaction responsibility, which can be positively changed their behaviors. Alternatively, the negative reinforcements were the removal unpleasant behaviors.

Similarly, both qualitative and quantitative data are defined using a variety of techniques that used for his action research based on the students in the same high school in New York level physics course (Jonathan Cohen, 2008). He designed and implemented two different techniques focusing on the discipline as a classroom management. The second years which the same curriculum in a constructive reinforcement style setting were motivated by the reinforcement, but the attention was directed toward the positive reinforcement, which gave more affect than the classroom management. Using two styles of teaching, the positive and negative reinforcement could contribute to the overall student efforts and achievements.

In fact, the student behavior cannot be directly changed by the teachers, however, the student behaviors can be change by stimulating environments and reinforcements. There are four critical factors that are influent the student learning achievement, where there are motivation, reinforcement, retention and transference which they were supported by Knowles.

It is shown that the positive and negative reinforcement where, the direct impact of the English teachers that used the instruction tool in learning process and examined the participation level of students in the classroom. The result showed that the English teachers were able to enhance their teaching behavior for student learning maximization (Inamullah et al., 2008).

It is reported that the comparison of the impact between the positive and negative skill acquisition, which was session behavior training. The finding showed that the negative reinforcement influenced the behavior improvement (Whall, 2011).

Regarding to review, the negative reinforcement could change the student learning behaviors, where the student negative behaviors are positively changed. In this framework, the negative reinforcement is implemented for the SAOC's problem groups, where they are in the Accommodator style, in which a group leader is assigned by a teacher.

## 2.9 Reflective Learning Theory

Dewey (1933) defined reflective thought as active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and further conclusions to which it tends (Henderson et al., 2004). This theory is mostly connected to perceiving reflection as part of a cycle of learning (Kolb, 1984). Reflection in terms of learning is a generic term for those intellectual and affective activities in which individuals engage to explore their experiences in order to lead to new understandings and appreciations (Boud et al., 1985). The concept of reflective practice introduced by Donald Schon (Schon 1983; Schon, 1987) is the cultivation of the capability to reflect in action whilst doing something, and to reflect on action – after it has been done. Journal writing is an intentional reflective design strategy that has been used in traditional (face to face) learning environments to facilitate the integration of new dimensions. Individual reflection is an important strategy that may enhance the development of insight, heighten cognitive awareness, promote critical thinking, and engender personal transformation (Andrusyszyn & Davie, 1995).

The levels of reflection are defined (Grossman, 2007). It focus on Deanna Kuhn's research into scientific thinking development (Khun, 1989) and Development Robert Kegan's Object-Subject Theory (Kegan, 1994) that applied to the problems of inspiring students, which be able to reflect. The assignments for improving students' ability to reflect were presented. Examples of student reflections were provided. In conclusion, these may be especially helpful for faculty in a wide range of courses.

The application of two models of reflection to a set of reflective learning journal and to offer some recommendations for educators, researchers, and students are studied (Thorpe, 2004). Using a three stage model of reflection, 52 nursing students explored managerial concepts. In conclusion, the major findings indicated that the students may be classified to be non reflectors, reflectors and critical reflectors.

From above researcher, they cannot conclude the specific the reflective techniques for reflecting cognition. The useful technique is found and used in this research, in which the detail is given as following.

The technique for reflective learning using by ‘Five Point Reflection Scale’ (Table IV p 60) of (Bain et al., 1999) are studied (Henderson et al., 2004). The results were concluded that the Reflective Journal gave students’ chance to deeply explore in theory and practice including critically writing, reading and thinking skill developments, in which the student’s experience and facilitated learning analysis could be performed. Furthermore, learnt skills promote professional competence was anticipated, where the continuous improvement could be developed by reflecting on effectiveness them to new situations.

Table 2.1 The Five Point Reflection Scale

Five point reflection scale  
(Adapted from Bain, Ballantyne, Packer & Mills, 1999, p. 60)

Level	Description	Score
1. Reporting	<input type="checkbox"/> The student describes, reports or retells with minimum transformation and no added observations or insights	3/15
2. Responding	<input type="checkbox"/> The student uses source data in some way, but with little transformation or conceptualization.	6/15
3. Relating	<input type="checkbox"/> The student identifies aspects of the data which have personal meaning or which connect with their prior or current experience. The student gives superficial explanation of the reason why something has happened or identifies something that they need or plan to do, or change.	9/15
4. Reasoning	<input type="checkbox"/> The student integrates the data into an appropriate relationship involving a high level of transformation and conceptualization and seeks deep understanding of why something has happened exploring the relationship of theory and practice in some depth.	12/15
5. Reconstructing	<input type="checkbox"/> The student displays a high level of abstract thinking to generalize and / or apply learning. The student draws original conclusions from their reflections, generalizes from their experience, extracts general principles, formulates a personal theory, or takes a position on an issue. The student extracts and internalizes the personal significance of their learning and / or plans their own further learning on the basis of their reflections.	15/15

From the table 2.1, each level represents a degree in complexity from reporting, responding, reasoning and reconstructing, which the meaning could be explained as following.

**Reporting:** The student explains and reports (or retells), with and without minimum transformation and additional observations or insights, respectively.

**Responding:** In some way, the student uses source data. But student knows little transformation or conceptualization.

**Relating:** The aspects of the data are identified by student that have personal meaning or connecting with their prior or current experience. Why something has happened or identifies that they need or plan to do, or change, where the reason is superficial explained by the student.

**Reasoning** The data into an appropriate relationship involving a high level of transformation and conceptualization and seeks deep understanding student is integrated by student, which something has happened exploring the relationship of theory and practice in some depth.

**Reconstructing** The high level of abstract thinking to generalize and / or apply learning is displayed by student, which draws original conclusions from their reflections, generalizes from their experience, extracts general principles, formulates a personal theory, or takes a position on an issue. The internalized personal significance of their learning and / or plans their own further learning on the basis of their reflections are extracted by student.

This tool utilizes prior knowledge and focuses on constructing, deconstructing and reconstructing knowledge based on new experiences provided by learning environments.

From the reflective theory, it is shown the promising learning outcomes of student cognition. The “Five Point Reflection Scale” is the concrete tool that has been used in the Negative Reinforcement for GBL in Individual Difference framework as an effective tool to evaluate the individual reflection through interactive journal writing of SAOC students. That reflective action extends learning in terms of depth, and the personal learning process is stimulated through dialogue during interaction in team.

## 2.10 Social Network Utility



Figure 2.4 The Social Network (Johnchang, 2013)

There are many tools that support learning ability. There are several tool types which some tools are appropriated for some organizations. Technology and education are interlaced by teachers that have favorite to do their teaching and connecting with the students, which is easy and enjoyable for all applications. Moreover, it is a useful tool for the most tech-savvy teachers. The relationship between the education technology and the teacher is concluded as follows (Sue, 2012):

**Social Learning:** the tools use social media to assist the connection of learners and teachers such as the Skype can be a great tool for keeping in touch with other educators or even attending meetings online, where help teachers to connect with the other classrooms or in other countries.

**Learning:** this can help the educators to create the interesting lesson and more effective such as Educreations, which is an online tool for the iPad that lets the teachers to construct the video and teach a given perfect topic for learning or getting students to show off their knowledge.

**Lesson Planning and Tools:** these tools pull together the importance lessons and design incredibly the interesting student projects such as Glogster, which is a social site that lets users blend the music, photos, videos, and anything to create learning materials and a handy tool for creative student projects.

**Useful Tool:** this can help the educators to stay connect, organize and extend the multimedia lessons and learning tools such as Twitter, where teachers could take part in chats and connect with the other educators, share their ideas, or use in the classroom to reach out to students.

In this research, we suggested the social network reviews that utilized the participants to share and construct their knowledge in various areas which are shown as the following. It is reported there is the shift from the content-centric to the network-centric education by using Social Network Services (SNSs) in higher education of the South African (SA) culture context (Halse and Mallinson, 2011). The purpose of the paper was shown the way forward to develop SNSs especially the SA culture context, which explained to accept with current SNSs. The SNSs are defined as the web-based services that allow individuals to (a) construct a public or semi-public profile within a bounded system, (b) create a list of other users with whom they share a connection, and (c) view and traverse their list of connections and those made by others within the system (Boyd and Ellison 2007). This has become the crucial points of pedagogical perspectives shift towards understanding learning as a social process. In conclusion, the transfer from content-centrism to network centrism in e-learning tools was reminded an approach which took the SA social-culture characteristics into account. SNSs request for the view of human psyche and in SA context, which had the contribution of culture appeal. Finally, the movement of learning model was SNS-based rather than LMS-based would be appropriated, which could be used to suggest approaches at other universities in sub-Saharan Africa in terms of decisions made about the value and implementation of e-learning initiatives.

Personal Learning (PL) could be improved by activate with other (Vygotsky, 1978). The practitioners were higher ability level when participation with the other. He argued that people learned better in social setting and through social interaction. The communities of practice contained the concept which they set up the necessary



interactions environment to improve their learning (Wenger et al., 2002). The community members could focus the knowledge sharing of practices including the skill improvement by interaction in the society.

The key factors that contribute to the successful improved learning, in which the construction of a sense of community, communication, culture and purpose were involved, are reported (Campbell and Uys, 2007). The technology was the first key factor, where was used to be the most achievement that supported the community information, where the practitioners were higher level of personal interaction. The culture in the use of technology was the second key that influenced in a learning community developing. The abilities to share the understandings of member were impacted by the culture, which distributed the environment. The purpose of community was the third key that was the correlation between the technology and the objective of the use.

A study has influenced the construction of knowledge by using social network as learning tools, the Weblogs and face-book, in tertiary students whose age were 18 - 20 years and had better autonomy of time, choice of what to learn, how to learn, when to learn with the large depositories of information and data around them (Ling, 2013). The study was interested in the benefits of Web 2.0 applications for students learning, which could be used to search for the possible problems and topic with using Weblogs and face-book. Consequently, the purpose of the study could find a better understanding of the students' opinions of the learning tool through a qualitative method of semi structure and informal interviews. The results were shown that the interactivity with the other by using the Weblogs and face-book postings could construction the knowledge.

Nowadays, the increasing in social network usages have been dynamic changes, 100 Ways to Use Face-book in your classroom is more suitable (Heick, 2012). The Face-book is an alternative tool that the educators are found greatly ideas for putting to their works and compiled a fresh batch of ways to make Face-book work in your classroom, which is a wealth of resources, assignments, sharing, Collaboration & Discussion, Classroom Management& Organization and Apps & Groups in any type of classroom as could be explained in the following.



Figure 2.5 Face-book (Zuckerberg, 2010)

**Resources on Face-book:** These are more interesting updated status. The practitioner can find resources for research and connecting with the publication both local and international such as **Ask for information:** Face-book can get great information about the largest seed in the world according to the *Guinness Book of World Records*.

**Projects & Assignments:** this is an attractive platform for learning and offer importance ways to make the site a part of projects and assignments in your classroom such as **Book reviews:** the educators ask the students to review and report on books that their assigned in class and share what they've learned with the rest of the class. Besides, **Brainstorm:** teacher asks students to coordinate and conference classroom's Face-book page.

**Sharing:** the knowledge and resources are shared through the power of the Face-book community such as **Archive discussions:** the great area to link to and archive classroom slides where the students can access, reference and discussion is Face-book.

**Collaboration & Discussion:** the use of collaboration and discussion together through the Face-book by students, educational professionals and parents such as **Writing workshops:** the peer review and instructor oversight are easy for students to participate in the Face-book's collaboration.

**Classroom management and Organization:** the classroom is enhanced by personal connection, reminders, and tools for organization, where the concept can be present the important ways such as **Share positive updates:** it is used to point out with the Face-book status message when a certain class or group does particularly well.

**Apps & Groups:** this can assist and share the documents, college resources and books the educators by using the Face-book such as **Homework Help:** the students can ask for help in the Homework Help Face-book group when they are some problems.

From the utility of Face-book, there are many the studies that support the useful of the tool. Two cases that furnished with different personal learning environments (PLEs) were studied (Lu and Churchill, 2013). These two cases used the popular educational social networking platforms-Elgg and Edmodo-to respectively support student-centered pedagogical activities. To collect the data, the interviews, online observations, and questionnaires were adopted. The data that impact of PLE on learning engagement from students' point of view was qualitatively analyzed and investigated the identify issues which related to implementing effective PLEs.

In the first case, the student was assigned to develop and update a digital portfolio and peer reviewed the one of another's portfolios with constructive suggestions. The students were learned by individual-centered place which creating learning content and collecting digital resources including collaborative by critique, sharing and group editing. The teacher played a role as facilitator to give material of learning, guide the students to discover the new knowledge, critique the posted assignment and inspired the students to share the multiple aspects.

The results of the first were shown that the social interaction pattern could be shaped by Elgg, which was the disadvantageous for in-depth discussion. They found that the social interaction was primarily characterized by short-lived, fragmented and social-oriented conversations. Elgg is usually no developed group norm that would confine interactions to the common interests and set a formal tone for learning collaboration, which was distributed nature also led to fragmented and short-lived social interactions. Secondly, the impeded students to contribute critical comments to others were overcome. In interviews, the students mentioned that the received comments for improvement of

completed tasks were not useful. Thirdly, the fruitful learning outcomes needs more social skills and autonomy on the part of students in PLE. Fourthly, the Elgg is weak in course administration and management. For instance, the instructor in this study was encountered by several difficulties on this Elgg-based social networking platform because the role of teachers from students and provides no facility for managing students and learning content cannot be distinguished by Elgg.

In conclusion, the results of the first case, the students were supported and take control of their learning process by the individualistic nature of Elgg, which the function were related to content creation and commenting were found to be particularly useful for the students to develop learning portfolios to record personal thoughts, organize writing assignments, share learning artifacts and ideas, and receive personalized feedback. This individual-centered pattern of communication seems problematic when it is inherited in the collaborative learning aiming to engage students in developing shared understanding through back and forth discussion.

The second case was used the Edmodo, where the group-oriented learning platform was viewed as Face-book, which included the new dimension for students engagement and the students could access the learning environment without exception and keep update the latest activities through their mobile devices. However, it was impossible that they took full time to manage their own learning for learning need variety, which individual learning was avoided and seemingly lacking in group-share spaces. In summary, Edmodo may be suitable better for group alliance rather than personalized learning, where the results were recommended that authorized with autonomy, personalization and the learning process controlled. The students could be engaged in self-directed, cooperative and significant learning. It was indicated that the ways of students that engaged in learning were considerably influenced by the technical affordances of the technology and used to construct PLE. Nevertheless, it was suggested that these two cases were directed by a small number of subjects with short-term duration, where the future work could be conducted in other subjects, long-term duration and other technologies.

However, in the context of the social network utility and the above reviews, the Face-book is used in the second case study for career guidance by addressing the students

connected with the recruiting professionals (Alumni), mentors, and more through Facebook. It will be the multiplier effect tool for the Negative Reinforcement for GBL in Individual Difference Framework to the learning outcome achievements.

### **2.11 Proposed Solution**

The Kolb learning theory is employed to identify the learning styles of the learners and to investigate individual difference among learners. In addition, the mismatch problem between the learners and teachers can be accomplished accordingly. From the viewpoint of the learner ages, the theory of adult learning are also included as a proposed methodology. In case that the development of the leadership is required, the negative reinforcement will be introduced. Specifically, the Group-Based Learning (GBL) will be instrumented base on the environment and backgrounds of the learners. The Constructive learning is used to design the suitable assignment for individual difference learner and reflective learning with the concrete experiences that the student learning outcomes can be evaluated. The multiplier tools can utilize the social network. All of the afore-mentioned theories will be used as a solution methodology of which the details will be elaborated and discussed in chapter 3.