C-PLATS: A PROBLEM-SOLVING ABILITY DEVELOPMENT SYSTEM

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FOREWORD

Skill Development and Specialized Education

Although OCD sounds a little like COD (Concise Oxford Dictionary), once appreciated as the best medium-sized English dictionary available, their contents are quite different. Otemae Competency Dictionary is a "dictionary of basic skills," designed and produced uniquely by Otemae University. It is a tool to help students both nurture and measure their own basic social skills in preparation for their full entrance into the real world. But why would we need a dictionary for something like that? Of course, it is different in nature from terminology dictionaries such as the popular *Gendai-Yōgo no Kiso Chishiki* (Basic Knowledge of Cotemporary Words).

Now that we have entered an era of global-scale competition, and that Japan is struggling against a long-lasting economic depression, the necessity for university students to acquire not only professional knowledge (or fragments of it) but also basic skills for surviving in the real world as independent adults is widely recognized. They are expected not only to know things, but also to be able to actually do things.

But how can a university, the primary duty of which is to provide specialized intellectual education, help students hone their practical social skills? How many hours can we dedicate to society entrance education sessions and job search seminars without sacrificing the specialized education, which should be our prior concern? How can we solve this big dilemma, which all universities have confronted and dealt with to various extents in the past years?

C-PLATS and OCD are Otemae's answer to these questions. OCD is a progress check sheet, as it were, for the process of nurturing the skills summarized in C-PLATS.

In reality, in any field of specialized education, students do not use only their brains, as are often and wrongly assumed. Needless to say, academic pursuits in any discipline inevitably involve finding (or being given) specific topics, doing research, analyzing, creating and inventing, finding solutions, explaining, and taking action (writing, presenting, producing, performing). In order to accomplish these tasks, such basic skills as those for communication, logical thinking, teamwork, leadership and social responsibility are absolutely necessary.

C-PLATS breaks down those processes and skills into ten basic competencies. OCD "defines" specifically and articulately what the students can do, and how well they can do it.

Each student can evaluate their own current abilities by referring to these definitions, and recognize how much they have grown. On the other hand, each member of the teaching staff will be enabled to see which particular skills in their specific field may be acquirable for the student at the

moment, and what kind of course development is called for to foster their learning. Through devising ingenious teaching methods and their practical applications, the instructors will support the student's growth.

After all, there has to be no contradiction between specialized education and the enhancement of basic social skills – this is the conclusion that we have reached at Otemae University. Please turn the page to find out what our state-of-the-arts enterprise is all about.

Koji Kawamoto
President of Otemae University

FOREWORD

In February of 2010, along with another colleague from Alverno College, Dr. Judeen Schulte, I had the pleasure of being introduced to the administration, faculty and curriculum at Otemae University. What we found was a serious effort at educational reform that was begun in 2008. We observed committed academic staff and administration who had identified 6 important competencies and began to implement a systematic competency program throughout each student's program of study. I was both surprised and elated at the sophisticated and creative competency-based framework that was presented to us. By 2011, using electronic technology and attention to the career needs of students, a system called C-PLATS had been designed that incorporates 10 important competences: analysis, creativity, planning, presentation, action, communication, logical thinking, teamwork, leadership, and social responsibility. Each of these, divided in 10 stages, is to be systematically developed as each student pursues specific majors.

These 10 competencies are important learning outcomes. The faculty also realized that students must understand what these outcomes are and how well they are demonstrating them on a day to day, year to year basis. To deepen their leaning, the program requires students to self-assess their learning. Aware of students' keenness for using electronic devices to communicate, the staff designed a way for students to self-assess their learning and text their evaluations into an electronic portfolio. I know of no other college or university that is using electronic technology in this innovative way or has made self-assessment so easy to complete.

I was gratified to hear that this system and its founding principles were, to a large extent, inspired by the work of the faculty at Alverno College. I also have learned that Otemae faculty will form "ability departments" just as Alverno faculty have done. It is important to note, though, that the faculty at Otemae have designed a curriculum that fits its unique mission and programs. It is truly an Otemae program, not one imported from any other university. As we might put it in the United States, Otemae University has made competence-based education "their own".

As this program is implemented and further developed based on teacher and student experience in and out of the classroom, I am sure the curriculum will continue to change and evolve. Your colleagues at Alverno College will want to hear how your work is going and learn from it.

Kathleen O'Brien, PhD

Senior Vice President for Academic Affairs

Alverno College, Milwaukee, Wisconsin, USA

PREFACE

What prompted me to write this book is my appointment as Director of the Career Center of Otemae University.   In witnessing the extremely difficult situation of employment opportunity to which university graduates are currently exposed, I attempted to reconsider what kind of ability and competency university students have to acquire to meet the expectation of employers by basically analyzing the social and industrial structures of Japan which have undergone revolutionary changes in the past decades. I have come up with the conclusion that the key element is a 'problem solving ability', and submitted a reform proposal to Yu Fukui, Chairman of the Board. Having an all-out approval of the Chairman, I contributed an article entitled ''From Knowledge-based Education to Skill-based Education: Proposal for a New C-PLATS Competency Method" in No. 11 2010 issue of Otemae Journal.   This book is based on the above article but contains more in-depth discussions and specific proposals for reform and aims at promoting the efforts of Otemae University toward pioneering university reform and allowing the whole university to share a common perception based on the founding philosophy, the educational vision and systematization of ability development. My initial approach was to clearly image a person with qualities society needs, followed by consideration of competencies such person has to acquire and analysis of such competencies. Finally I have clarified the interrelation between each competency and the positioning of ability-building education in the perspectives of liberal arts education as advocated in Otemae University's educational vision and the founding philosophy 'Study for Life'.

The first half of this book focuses on structuring of a new concept system and the second half forms a dictionary presenting definitions of 10 sub-competencies as elements of the new C-PLATS, purposes and goals of ability development, system of ability development, methods, interrelation among sub-competencies, achievement level definitions (benchmarks) and a list of references/recommended books.   I have made conceptual works based on the above-mentioned article but in more developed forms in the first part of the book and completed the competency dictionary in the latter half with a help of professional knowledge of the editorial board members.

The level definitions of competency achievement in the dictionary are set in 10 stages, from -2 to 7, of which the highest level (Level 7) is equaled to the management level of company workers. The challenging goals are set to fit the target setting of adult students frequent in correspondence education courses, on one hand, and to allow the young students who should pursue ambitious goals and continue learning through life. I believe that this is just the scheme reflecting the founding philosophy of Otemae University 'Study for Life'.

Furthermore, I have edited this book with an idea in mind that it be accompanied by the Ability

Building Methods Collection (not for sale). The Methods Collection is still a tentative version and will be improved constantly in future. I have proposed to set up a Competency Faculty Organization in which every teacher belongs to one or other Faculty and develops constantly new competency acquirement methods in the process of improvements of his/her daily education. It is, therefore, presented in a binder file to allow additions and replacements at any time. While the current version contains about 200 pages, I expect it will become a volume of 1,000 pages or more as new methods are developed and success cases are accumulated. The new C-PLATS itself has just been initiated and has to be open to continuous improvement to which the Faculty as a learning organization is expected to contribute.

I would be more than happy if this book serves as a mission-critical system generating the driving force to promote the university reform and possibly also provides, not only to Otemae University but to other universities, valuable knowledge for education reform, thereby contributing, more in general, to advancement of university education.

Naoya Ashihara

INTRODUCTION

Today, Japan faces unprecedented deterioration of its labor market. College-graduate job seekers have difficulty in finding good jobs. At the same time, employers have difficulty in finding attractive students to employ. What causes this mismatch in the labor market? This paper argues that a fundamental cause is that the education system is failing to respond to the rapid, drastic revolution of Japan's industrial structure.

The tremendous changes in industrial structure are caused not only by domestic factors but also by global structural change. After WW2, Japan accomplished high economic growth by exporting low-priced, high-quality products made from imported resources, manufactured by low-paid, albeit high-quality workers. The primary role of education in that industrial structure was to supply the labor market with manpower as soon as possible. Junior high school graduates were referred to as "golden eggs" and commercial and industrial high schools played a significant role in supplying massive human resources to industries. At universities, basic learning was required in the first two years and specialized learning was required in the remaining two years. The advancement rate to graduate school was low. In order to respond to the needs of industry, universities provided society with graduates, irrespective of their quality in terms of educational outcomes. Companies were eager to secure recruits and did not expect universities to furnish students with high-level professional training. Most companies provided new employees on-the-job training under conditions of lifetime employment. It is undeniable that most universities in Japan have neglected to make an effort to improve the quality of education under these circumstances.

Over the last couple decades, large segments of the Japanese manufacturing sector have gradually moved abroad, most recently to China and Southeast Asia. As a consequence, Japanese industrial structure has shifted from manufacturing toward R&D and service industries. At the same time, output is shifting from mature markets, such as Japan, Europe and America, to developing countries. Drastic changes of industrial structure have resulted in changes in corporate recruitment policies from quantity to quality. Companies now require work-ready students well equipped with high technical and intellectual abilities and capabilities to work globally.

With rising wealth, more than 50% of the young Japanese attend university. Competition among universities for new students has greatly intensified. However, many universities still cling to old-fashioned educational methods, such as knowledge-oriented teaching and graduate students without "quality guarantee." As a result, the quality of university graduates is worsening. Many students are pushed out into the world without basic skills that society needs. Companies facing intensified competition with competitors from not only developed countries but developing countries as well are increasingly unwilling to employ such students. Instead, they are turning away from Japanese students and employing foreign students with high abilities and good work attitudes. So, in

addition to production and markets moving offshore, Japan's labor market also is looking offshore.

Japan has reached a critical situation where Japanese universities must revolutionize their educational methods and strategies to provide students with abilities according to society's needs. This is their social responsibility. Universities that fail to do so are not worthy of existence.

Otemae University has been working on wide-ranging reforms and in 2008 introduced a system named "C-PLATS" designed to provide students with basic competencies to meet society's needs. C-PLATS is an eponym for ten (formerly six) such competences. Under C-PLATS, every course, while pursuing its own particular subject, should be designed to help students systematically develop some or all of the ten competences. Learning outcomes are evaluated periodically by students themselves, by their teachers and by external assessors. This pioneering program is gaining wide recognition among both academic and business circles in Japan.

C-PLATS is not static. Reforms and improvement continue to meet the ever-rising quality demanded by Japanese society. Without such reforms, the social contribution of universities will be reduced to nothing. Our pioneering efforts for continual reform requires that faculty, administration, staff, and students have common understanding of C-PLATS definitions, goals, targets, educational methods, and achievement levels. This monogram was created to establish a common understanding and to make the organization learn and evolve itself further.

I. PIONEERING REFORM OF OTEMAE UNIVERSITY

Otemae University initiated drastic reform in 2007 under the leadership of Yu Fukui, Chairman of the Board of Otemae Educational Corporation. First, a 3-faculty crossover system was introduced, enabling students to take any course offered by the university, regardless of which faculty they belong to. This opened the door to students to a much wider range of knowledge. Additionally, the concepts of "majors," "unit-free" course selection, and grade point average (GPA) were introduced. These revolutionary changes form the basis of Otemae's new Liberal Arts college system.

At the core of these reforms is C-PLATS. C-PLATS was designed to develop in each student six competencies, and transform Otemae from an institution that provides knowledge-oriented education to one that provides ability-building education. Implementation of these initiatives began in 2008, earlier than other universities. C-PLATS is an acronym for Creativity, Presentation, Logical Thinking, Artistic-sense, Teamwork and Self-control. These are the core competencies that each student is expected to acquire for his or her professional life. Students learn and evaluate their C-PLATS progress themselves. C-PLATS is already in operation in our compulsory Freshman Seminar for first-year students and in the Basic Seminar for sophomore students, and is producing encouraging outcomes.
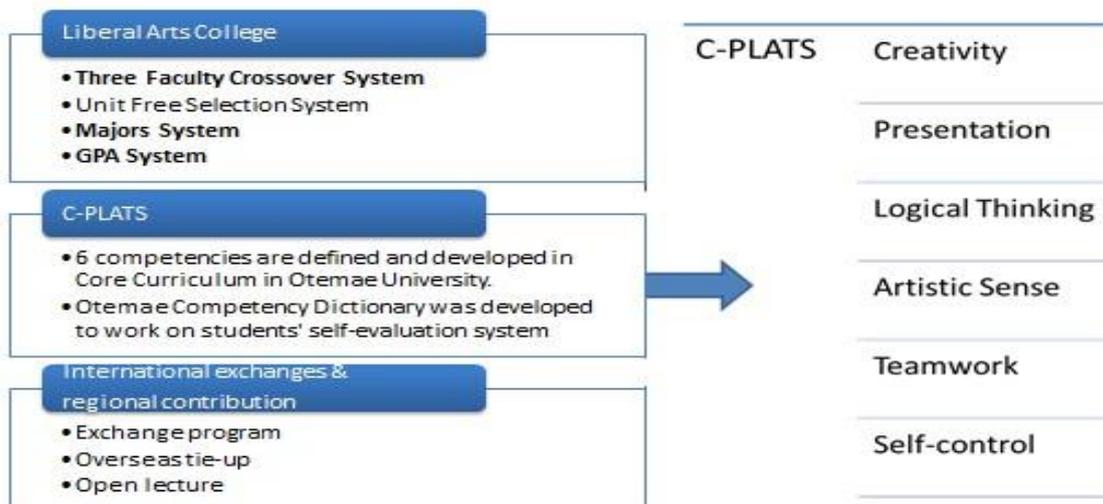
Figure 1. Framework of Pioneering Reform at Otemae University

  Otemae's CELL Institute for Educational Development's report on C-PLATS and its
ability-building program has received wide-spread praise and growing attention from academic
society for its pioneering role in education reform.

  Although the C-PLATS system has become a forerunner in educational reform, we need to
strengthen our efforts to (1) achieve class improvement through penetration of this system in all
Otemae coursework, (2) pursue renovations that lead to further university reform and better clarify
the positioning of C-PLATS within our Liberal Arts framework and Otemae's "Study for Life"
mission, (3) adopt a process of continual reevaluation of C-PLATS, (4) share our ability-building
methods more widely, and (5) develop new ability-building techniques.

  The following sections introduce a new version of C-PLATS that will be the basis for further
reforms. It includes definitions of ten sub-competencies, educational goals, target abilities,
relationships among sub-competencies, educational methods and recommended reading.

II. EVOLUTION TO NEW C-PLATS

  C-PLATS originated in 2008 for the purpose of educating students with basic skills required by
society. C-PLATS was renewed in 2011 and will continue to evolve further. The main reviewed
aspects of new C-PLATS were as follows.

  i.   The core aim of C-PLATS is "Problem-Solving."
  ii.   The number of competencies was reorganized from six to ten.
  iii. The ten competencies were reclassified into three groups related to Thinking, Action,
        and Social Responsibility. Together, they form the "double C-PLATS," with Thinking
        competencies and Action competencies coming together within a framework of Social
        Responsibility.

1. Problem-Solving: The core concept of C-PLATS

We designed C-PLATS to fulfill Otemae's social responsibility as a Liberal Arts college by providing Otemae graduates with basic skills so they can contribute meaningfully to society. In that way, Otemae graduates will be able fulfill their own social responsibilities. The overall aim of C-PLATS is to develop in students the ability to solve problems. All human endeavors are series of problem-solving activities, whether they are in the realm of academics, politics, economics, or any other aspects of human life. Therefore, the most basic and overarching ability is the ability to solve problems.
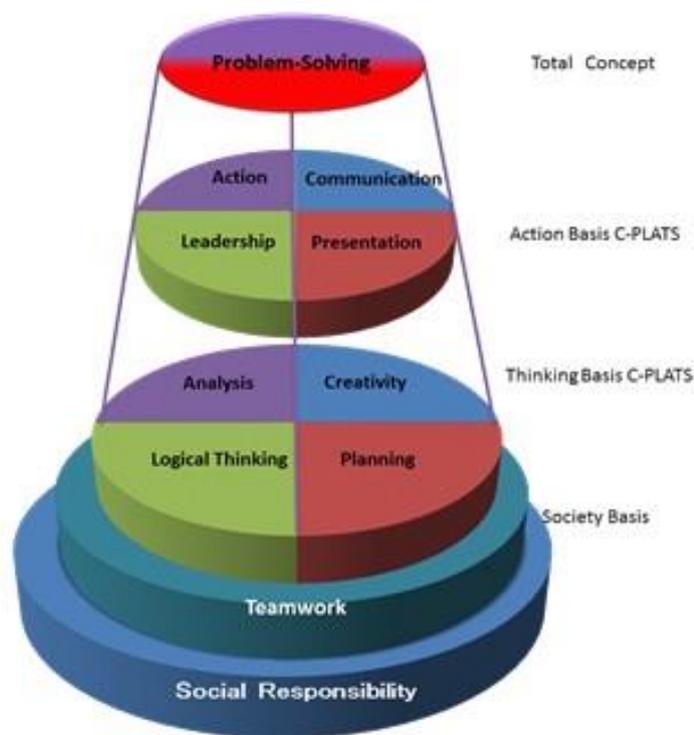

Figure 2. C-PLATS System

C-PLATS trains students to acquire ten sub-competencies or basic skills so that they will be able overcome difficulties by solving problems and move on in their life irrespective of career choice or life path. Our goal is to create men and women of action who can get things done, not simply a knowledgeable people who know things.

2. Ten Sub-Competencies

Our analysis of the problem-solving process has led to our conclusion that there are ten sub-competencies indispensable in acquiring C-PLATS abilities. The ten sub-competencies are

Creativity, Communication, Planning, Presentation, Logical Thinking, Leadership, Analysis, Action, Teamwork and Social Responsibility. Details are presented below.

3.   **Double C-PLATS**

These ten sub-competencies are grouped into three categories, Thinking, Action, and Social Responsibility. Problem-solving demands highly trained thinking ability followed by action, which is mindful of social responsibility. This conforms to "the three basic skills for working people" - Action, Thinking, and Teamwork - that is advocated by Japan's Ministry of Economy, Trade and Industry (METI).

The concepts social responsibility and teamwork are closely related. People have social responsibility as a member of society, and should be mindful of one's obligations and responsibilities to society. Thinking consists of four competencies of the Creativity, Planning, Logic and Analysis. Thinking and Social Responsibility comprise "Thinking Basis C-PLATS." Action Basis consists of competency in Communication, Presentation, Leadership and Action. Action Basis and the Social Responsibility comprise "Action Basis C-PLATS." Together, Thinking Basis C-PLATS and Action Basis C-PLATS are double C-PLATS. The Double C-PLATS builds problem-solving abilities effectively through balance like two wheels of a cart.

III.   ABILITIES SOCIETY NEEDS

The abilities society needs vary, depending on business or occupational specialty. However, the ability to solve problems is a need common to every business or occupational specialty. Each day as members of society, we are constantly solving problems related to daily life. Some of these dilemmas are about how to make the world better place to live. Especially in the corporate world, business activities can of thought of as sequences of problem-solving challenges. It could be said that companies get paid for solving customers' problems and that all corporate activities are series of problem-solving to achieve certain goals. Therefore, it is natural that companies want to employ people who face difficulties and can overcome them by solving problems.

What abilities are needed for problem-solving? The answer is a balance of intelligence, passion and will. Problem-solving cannot be accomplished by knowledge alone. Of course, knowledge is necessary, but it must be accompanied by an ability to network and the intelligence to restructure and utilize knowledge.

Intelligence alone cannot solve the problems of society because human beings are emotional creatures. Passion and sensitivity to other's feelings are required. A strong "will" may be based on unshakable faith and personal philosophy. Society needs people who have a good balance of intellect, passion and will. Sometimes these are referred to as "the three elements of the personality."

1. Intelligence

Intelligence consists of two elements; knowledge and abilities. Knowledge is simply possessing information originating from other people or books (people of the past). After World War II, universities in Japan provided knowledge-oriented education. This contrasts with ability-oriented education, where the emphasis is on the actual "doing" or "getting things done." If you know how to do something but cannot actually do it, you are incompetent. When you are taught how to pass a ball in a game of soccer, or in other words, you have the knowledge of how to pass, does not mean that you have ability to pass, until you have actually exercised that knowledge by passing the ball. Thus, ability is to do something for real; solve problems that lead to a goal.

In the real world, knowledge alone is not deserving of high praise. One's competency in a particular area is valued only when the person actually solves problems using one's knowledge. Marketing, engineering, and foreign language knowledge is highly valued, not on the basis of simply possessing such knowledge, but rather on the basis of actually use that knowledge to solve problems to achieve goals.
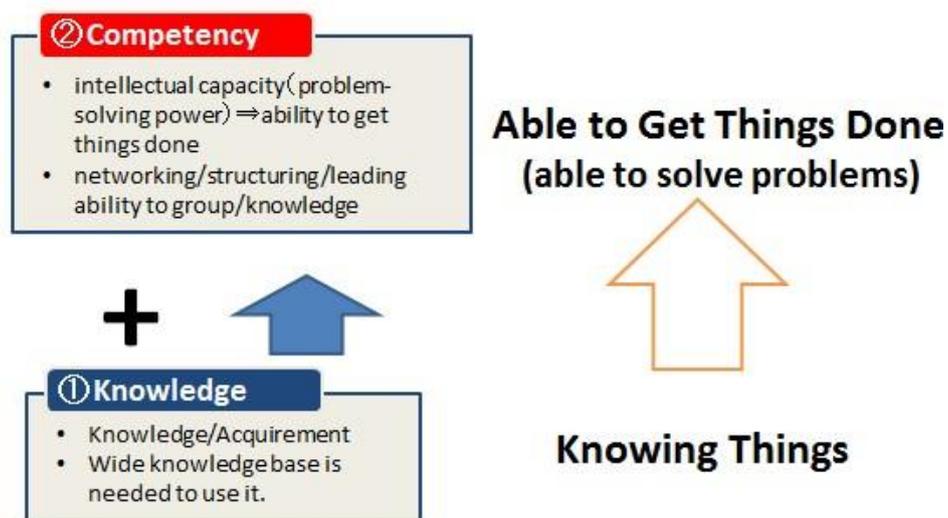

Figure 3. Knowledge and Competency

2. Passion

Problems in the real world can't be solved by the logic of intelligence alone. Human beings are emotional creatures, and passion is enormous energy to move people. Aristotle referred to it as "Pathos." When trying to turn the wheels of society by only the logic of "harsh words makes the going rough.[1]" Passion is necessary to reduce friction. However, sometimes passion can be

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[1] Natsume Soseki, Alan Turney (tr.), *The Three-Cornered World*, Peter Owen Publishers (London), 1965
Approach everything rationally, and you become harsh. Pole along in the stream of emotions, and you will be swept away by the current. Give free rein to your desires, and you become uncomfortably confined. It is not a very agreeable place to live, this world of ours.

dangerous and make things worse, which should be taken into consideration.

There are emotional aspects of problem-solving, such as communication and leadership, that should not be disregarded. The ability to manage one's own emotions and manage the emotions of others are an important problem-solving abilities.

3. Will

It is the strength of "will" that achieves a goal while balancing intelligence and passion. A strong will is supported by a strong philosophy which reflects the purpose and values of one's life. A strong will arises only in a person who can clarify the priorities of values in life and possesses firm raison d'etre.

A nation or an organization where young people have no ambition is sure to reduce its strength. It can be said that one of the critical factors for the decline of Japan since the end of the 20th century is that young people have lost their ambition.

Universities are required to enhance not only students' ability and knowledge but also strength of their will. However, strengthening willpower is not easy. Dr. William S. Clark left his famous words, "Boys, be ambitious!" to Sapporo Agricultural College in 1877. And two talents named Inazo Nitobe and Kanzo Uchimura studied there, and later with this philosophy in mind they expanded their working field to overseas and left their names in history worldwide as representatives of Japan. The effort to make students hold an ambition is our social responsibility.
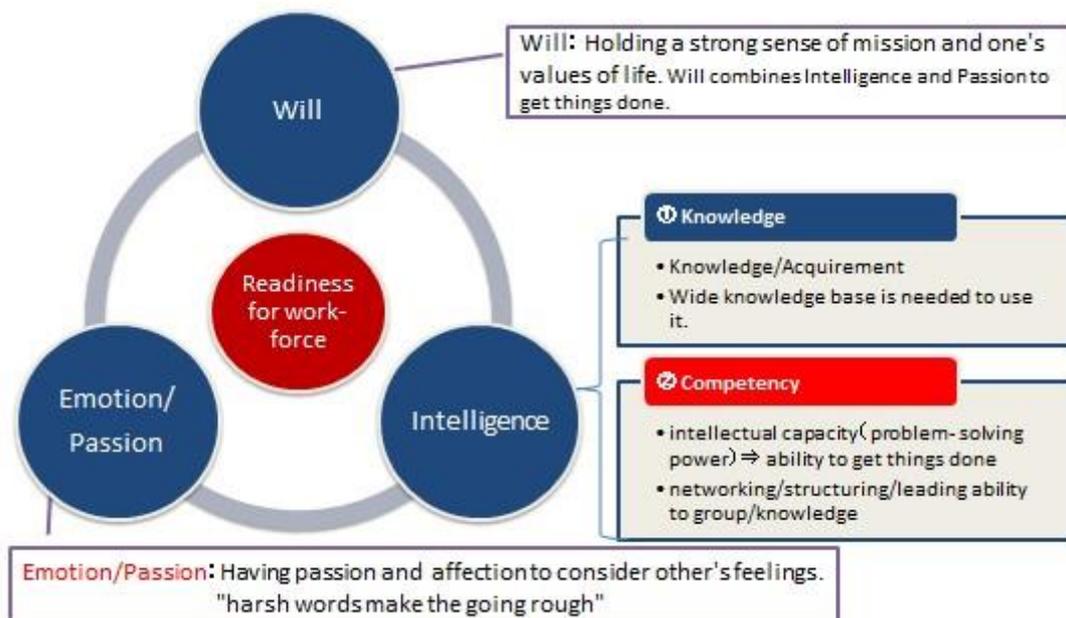

Figure 4 Readiness for the Work Force: Intelligence, Passion, and Will

IV.   NEW C-PLATS CORE CONCEPT "PROBLEM-SOLVING"

As our goal is to develop ability of students for solving problems and achieving goals in society, the core concept of the new C-PLATS is defined as "Problem Solving". By this, all members of Otemae University, the administration, faculty and students can share a common understanding to develop students who have highly trained problem-solving ability.

An analysis of possible complementary competencies leads to the conclusion that 10 sub-competencies are necessary and indispensable to enhance problem-solving ability. The following are the concept works to show how they work and are related to each other.

1.   Core concept of C-PLATS competencies

We defined the core concept of C-PLATS as "Problem-Solving." Then, what is a problem? We define it as "a gap between the way things are and the way things should be." Therefore, "Problem-Solving" is "to change present conditions into desirable conditions", and the goal of problem-solving is "desirable conditions".

2.   Competencies in Problem-Solving process

The process of problem-solving can be broken down into the following three stages.

     i.   Problem analysis and creation of solution options

    ii.   Decision making (the choice among options)

   iii.   Action

The abilities required in these processes are: 1 Analysis and Creativity in problem analysis in the solution-options creation phase; 2 Planning and Presentation in the decision-making phase; 3 Action in the action phase. These five sub-competencies are labeled as "Problem-Solving Process Sub-Competencies".

3.   Competency Basis

These five "Problem-Solving Process Sub-Competencies" alone cannot solve problems. In order to empower these five sub-competencies, additional five abilities are indispensable: Communication, Logical Thinking, Leadership, Teamwork and Social Responsibility. These additional five sub-competencies constitute the "Competency Basis".
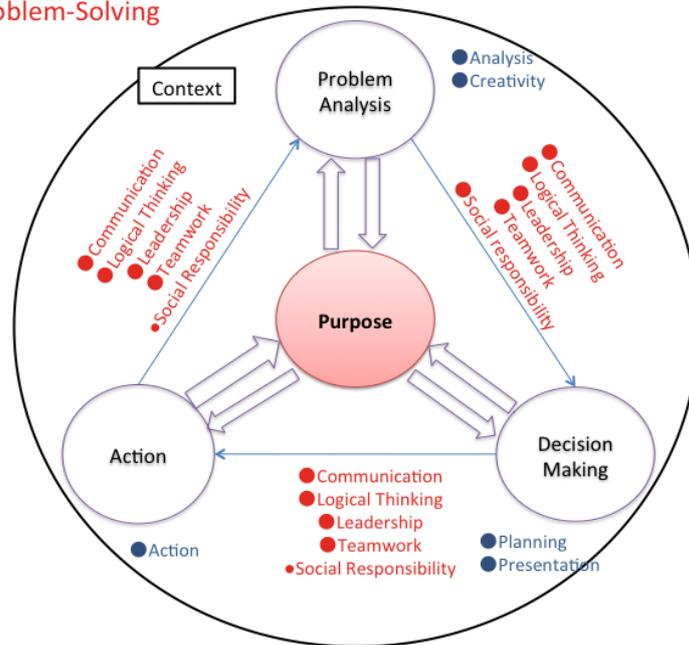
Figure 5 Problem-Solving Processes

4. Basic competencies of Problem-Solving

Figure 6 shows a matrix of "Problem-Solving Process Sub-Competencies" and the "Competency Basis", which illustrates why the Competency Basis is essential in problem-solving process. For further details on the interrelations of these competencies, please refer to the competency dictionary.

Figure 6 Competency Matrix

5. C-PLATS competency system and definition

Based on the total concept "Problem-Solving", C-PLATS is a system configured with five "Problem-Solving Process Sub-Competencies" and five "Competency Basis Sub-Competencies" which are indispensable in illustrating the importance of the former.

In this system, "Problem-Solving Process Sub-Competencies" enhance intellect, and "Competency Basis Sub-Competencies" enhance intellect and passion, and Social Responsibility enhances will, for the ultimate goal of well-balanced development of intellect, passion and will.

The concept of each competency should be clarified so that all members of the faculty and administration and students can contribute to the implementation of the ability-building program "C-PLATS" with common understanding. Figure 7 illustrates the total concept and the ten sub-competencies.

Competency		Definition
Problem-Solving		**Ability to solve challenging problem in societies and to achieve vision/goal**
Action Basis	Communication	Ability to exchange knowledge, information, idea, will, and feelings, etc. with others and to deepen shared understanding
	Presentation	Ability to explain ideas and plans in group and organization of the inside and outside to get their understanding and sympathy and to press listener's decision making.
	Leadership	Ability to lead organization by influencing followers, to solve problem of organization, and to achieve goal
	Action	Ability to straighten out that problem by prompt & adequate decision-making & execution to carry out mission/goal
Thinking Basis	Creativity	Ability to invent new ideas or creations to straighten out that problem
	Planning	Ability to set vision and goal, and make the main method and procedure to reach that goal most efficiently
	Logical Thinking	Ability to set up reason according to process of idea, to consider, and to prove things
	Analysis	Ability to understand things and events accurately, and to clarify the gap/problem between desirable status.
Society Basis	Teamwork	Ability to share purpose as member of group/organization, and to solve problem cooperatively
	Social Responsibility	Will to try to understand necessity for accomplishing social responsibility, and to contribute to society by one's values of life

Figure 7 Competency Definitions

V. C-PLATS IN THE FOUNDING PHILOSOPHY AND LONG TERM GOAL OF UNIVERSITY

Each university has its philosophy, as each company has its own management philosophy. The philosophy reflects the mission and values of the institution. The founding philosophy of Otemae University is "Study for Life", which advocates that people should continually improve themselves by learning through life so that they may continue to contribute to society, and that our mission is to support them. Based on this, we have introduced correspondence courses for working adults using e-learning technologies.

1. Liberal Arts College

Otemae University been revolutionizing itself into a Liberal Arts College in 2007, as already mentioned. We are not aspiring aspiring for a liberal arts education, but have introduced a series of new systems such as LEO (Language Education of Otemae), Three Faculty Crossover System, Majors system, Unit Free Selection System and GPA system and also encourage international exchanges. These new systems can be recognized as sub-systems within a liberal arts education framework.

These liberal arts education reforms are intended to implement our philosophy, "Study for Life." A Liberal Arts College provides students with not only academic knowledge, but also bases for learning over a lifetime.

The English words "Liberal Arts" were translated into Japanese as "ippankyouyou," meaning "general culture." The mission of Liberal Arts colleges has long been considered to provide a wide range of knowledge. In such recognition, a liberal arts education has been positioned at the opposite end of the scale from "ability-building education." Therefore, people might think it paradoxical that a Liberal Arts colleges promote C-PLATS, which is an ability-building program to acquire basic skills required in society.

However, that way of thinking is incorrect. "Liberal Arts" dates back to ancient Greece and the Middle Ages, and was comprised of a curriculum consisting of 7 Liberal Arts: the Trivium and the Quadrivium. Liberal Arts colleges in the US followed the tradition during their founding periods as early as the 17th century. As we consider the seven liberal arts subjects: grammar, dialectic, rhetoric, geometry, arithmetic, astronomy, and music, it becomes apparent that this is basic ability education for specialized study, not general culture education. Moreover, the education provided by Liberal Arts colleges in the US is not a knowledge education, as widely perceived in Japan, but rather aims at the development of basic abilities. Greene listed the following as goals of a liberal arts education in his publication, "The Hidden Ivies."

i. Think and problem-solve in a creative, risk-taking manner.

ii. Express ideas and feelings in organized, logical, coherent, descriptive, rich language both orally and in writing.

iii. Analyze, organize, and use data for meaningful solutions.

iv. Develop the capability of setting goals with appropriate information and research and then achieve these goals with proper means.

v. Help define a personal-value and ethical system that serves throughout life in making the challenging decisions one will face.

vi. Have the capacity and instinct to work in a cooperative, collaborative manner with others in one's professional and community life.

There is no reference to knowledge in this list. All are about ability-building. The first item on his list is about Problem-Solving and Creativity. The second is about Logical Thinking, Planning, Presentation and Communication. The third is about Analysis and Logical Thinking. The fourth is Action. The fifth is Social Responsibility. The sixth is Teamwork and Leadership. It is apparent from this list that the ultimate goal of a liberal arts education is "Problem-Solving" and all ten sub-competencies of our new C-PLATS are included in these six statements.

Thus, the purpose of a liberal arts education is corresponding to the goal focused in the new C-PLATS. A Liberal Arts College is "an academic organization to help students cultivate essential abilities to solve problems in their field of choice". The genuine liberal arts education Otemae University aims at matches not only today's needs but also a universal ideal of education of any time.

2. "Study for Life", the founding philosophy

Considering the objectives of a genuine liberal arts education, Otemae has devised C-PLATS as as a set of core competencies to be developed through Problem Based Learning (PBL) and Self-Directed Learning (SDL) methods.

PBL helps students prepare for any academic or professional challenges they may face in their later life by developing problem-solving skills. It also forms a base for lifelong study. Through PBL courses students learn the ten sub-competencies.

SDL helps students strengthen their willingness and competency on their own. In traditional teacher-led learning environments, teachers judge students' learning needs, build a learning program and one-sidedly lecture authorized knowledge to students. However, in lifelong learning environments, students must decide for themselves what to learn and participate in programs of their own choice so that they can enhance their ability by researching, analyzing and studying in a cooperative and collaborative manner with their peers. Students can be exposed to a wide range of challenging subjects by PBL, and studying cooperatively and collaboratively under a spirit of mutual

trust will lead to SDL.

We are convinced that the reform to ability development education using our new C-PLATS will play a major role in the introduction and improvement of Liberal Arts education in Japan and is the shortest way to "Study for Life," following the philosophy of Otemae University.
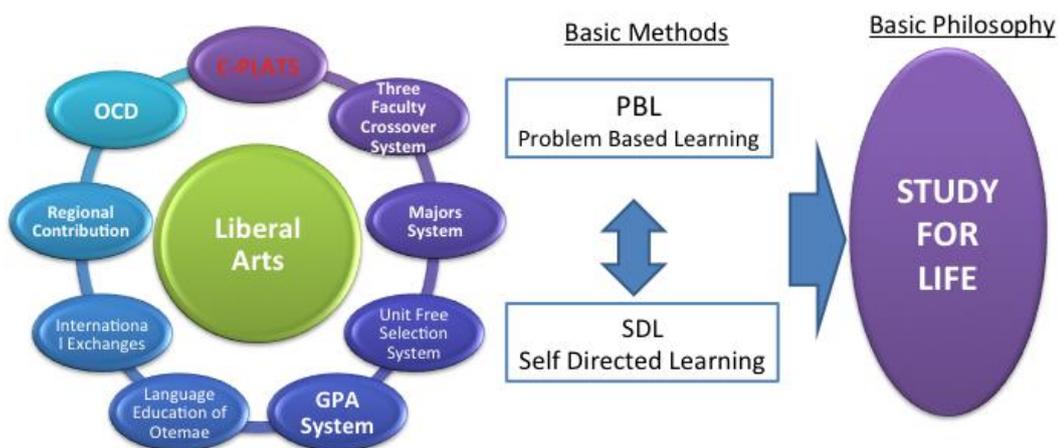

Figure 8 Philosophy and Concepts

VI. EDUCATIONAL REFORM BY OTEMAE COMPETENCY DICTIONARY (OCD)

This monogram, the Otemae Competency Dictionary (OCD), is designed to promote educational reform through C-PLATS. We recognize that reform doesn't advance simply by flying an advertising balloon. But rather needs clear guidelines, a common understanding by all participants, concrete educational methods and procedures. These are clearly specified in our OCD.

It is probably true that a knowledge-oriented education dominates because grading knowledge is easier than assessing ability. Fair assessment of ability has been assumed to be difficult because clarifying the criteria of ability assessment is not as easy as that of knowledge assessment. Moreover, it takes a large amount of labor and ability to assess ability, compared with knowledge assessment that can be done even by a computer, which also leads to the prevalence of a knowledge-oriented education. Although essay exams should be a norm in university, multiple-choice exams or fill-in-the-blank exams like in high school are conducted. This is bad practice of knowledge-oriented education where teachers provide mere knowledge and students memorize it. As for essay exams, preparing for them in itself is quite educational. Essay exams give students opportunities to improve their writing, logical thinking, analyzing and creating skills. However, as noted above, knowledge check exams are popular, because grading essay exams is time-consuming and the criteria of essay assessment are vague and assessors have to be competent enough to be persuasive about assessment, in case students disagree on assessment.

This monogram is intended to facilitate ability assessment by clarifying the definition on abilities, goals, assessment criteria and educational methods, and promote reform to an ability development education.

1. Conversion to PBL

Problem Based Learning is a fundamental part of reform, designed to develop essential abilities through a problem-solving process.

In knowledge-oriented education environments, students mainly listen to lectures and scarcely are given the opportunity to learn how to organize ideas, make decisions, put ideas into action and solve problems by making full use of given knowledge or information.
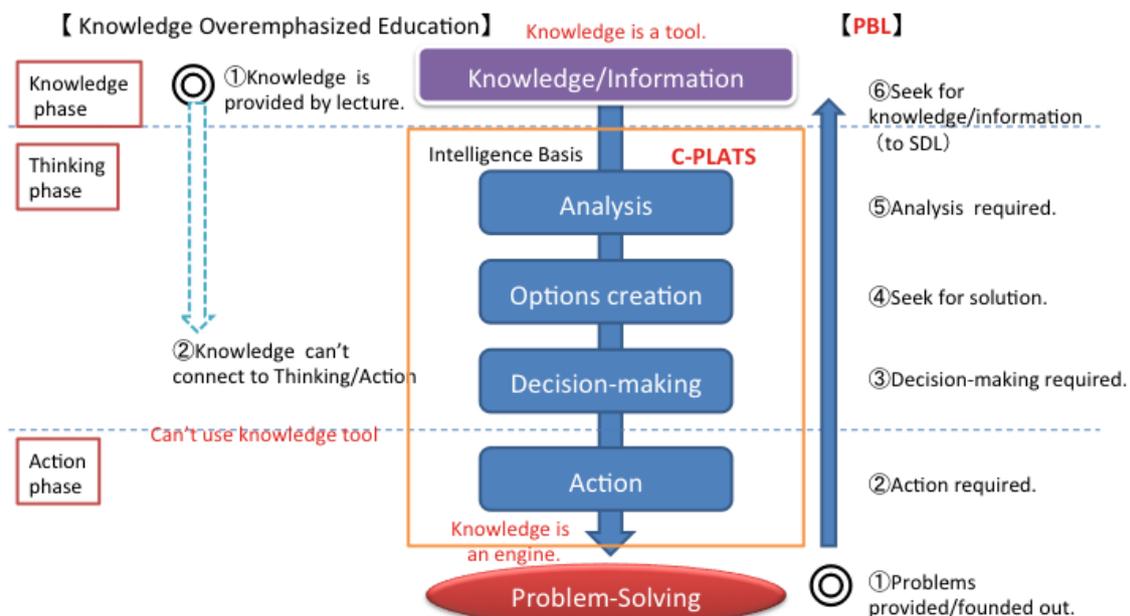

Figure 9 Comparison of PBL with Knowledge Overemphasis Education

On the other hand, in PBL environments, a "problem" is presented. Students think themselves what action to take to solve the problem and need to analyze data and create solutions, which makes them crave for knowledge and information. This process leads to the Self -Directed Learning. This way of learning may not be easy for students. But when they overcome difficulties, which brings them perseverance and concentration, they feel a sense of achievement and want to learn more.

The acronym PBL also stands for Project Based Learning. Through this educational method students develop abilities by tackling projects and making proposals as a member of a team. For example, students may build an action plan to revitalize a local community suffering from dwindling population. This study method can be categorized as Problem Based Learning and it has been

adopted in some seminars or special courses. Although it has proved to be effective as an educational method, it is impossible to put it into all courses.

On the other hand, Problem Based Learning is a method that can be taken easily in any curriculum, and actually it has been used already in various courses. For instance, a graduation thesis is the prime example of PBL. When students write a graduation thesis, they select a problem (subject or theme), analyze, define a desirable status (hypothesis), find solutions and make proposals. Thus, by finishing a thesis they can enhance their abilities of analysis, creation, planning, presentation, logical thinking and communication.

Besides graduation theses, classes where students get assignments, write reports, make presentations and have discussions are using PBL methods. By doing this in groups, they can also learn teamwork and leadership. A graduation thesis should be written after a number of daily trainings like this. Without any experience of writing reports in class it must be very difficult to finish a thesis in the final year. From this point of view, the question is raised as to how an educational system without any reports, other kinds of written assignments, or thesis requirements manages to improve basic abilities.

In-class essays are also a form of PBL. Students read books or other materials in preparation to write an essay, analyze data, find solutions and put them down in writing, which develops basic abilities. On the other hand, knowledge-check exams (fill-in-the-blank type) can assess how much knowledge students have learned but cannot enhance abilities.

Thus, the PBL method, with a little ingenuity in assignments, exams and classes, can help students acquire the ten sub-competencies effectively through finding problems, analyzing them, creating solutions, making presentations and having discussions.

PBL methods require that students prepare a lot for a class. Students don't learn passively but learn actively, using the above-mentioned SDL (Self-Directed Learning). Basic abilities can be improved remarkably and steadily because students tackle assignments voluntarily and acquire the ten sub-competencies automatically.

However, it may be painful at first for the students who are not accustomed to self-led PBL. But after challenging difficulties and through experience with PBL, they realize that their abilities have improved tremendously, which gives them confidence and a sense of accomplishment and encourages them do SDL more willingly. When the final class ends, they are filled with a sense of achievement and pride. The more they have challenged difficulties and the more that they have suffered to overcome them, the more they feel a sense of accomplishment and self-confidence.

The reform to PBL demands a lot of work for teachers, too, in the beginning. When essay exams were the norm, teachers were fine with that. But now we are used to knowledge-check exams, some may feel uncomfortable with choosing subjects and grading essay exams. Some teachers may not be accustomed to coaching students in the choice of subjects, methods of analysis, ways of building

ideas, presentation, discussion, and so forth. Teachers without any experience of guiding students for graduation theses might find it especially difficult. This is where this OCD becomes particularly helpful. Furthermore, the OCD can reduce the burden on teachers in specialized courses by familiarlizing students with the OCD, starting with compulsory courses during freshman year.

2. Contents of OCD

This OCD clarifies the following eight items about each of the ten competencies.

i. Definition: Competencies are defined for common understanding among the various participants of the university.

ii. Purpose of the ability development: The reason why the competency is necessary to enhance problem-solving ability.

iii. Target ability: The target ability that should be acquired in four years of learning.

iv. Outline of Ability Development: A broad overview of the structure of competency development.

v. Relations among competencies: Interrelationships among all 10 competencies.

vi. Level definition: The level is defined in ten stages from -2 to 7. The highest level, level seven is set at a management level of working people. This comes from the founding philosophy of our university. The challenging goals are set for adult students in correspondence courses as well as young students who should pursuit ambitious goals and continue learning through life.

vii. Methods: The main methods are listed.

viii. List of references/recommended books: For students who aim higher.

3. Methods Collection

The OCD is designed to be used alongside the Methods Collection (not for sale), which is a supplementary volume of concrete methods of the ability development program. The OCD is compiled to clarify the conceptual framework of ability development education and to develop common understanding among all members of the university. Ability development methods should be continually modified for improvement, while the concept framework should remain relatively constant to infiltrate into the organization. Therefore, the Methods Collection is in binder form to allow for additions or replacements at any time.

4. Development and organizational structure of the OCD methods

To keep developing OCD methods, a revolution of the organization is required. The matrix type organization was created by placing the six Competency Faculties on one axis and the present three academic faculties on the other axis, both of which adopt a faculty-crossover system. All teachers

belong to both an academic faculty and one of these six competency faculties. Each competency faculty develops the ability development methods under the leader of the faculty. This faculty system becomes a learning organization that keeps evolving through ability development.
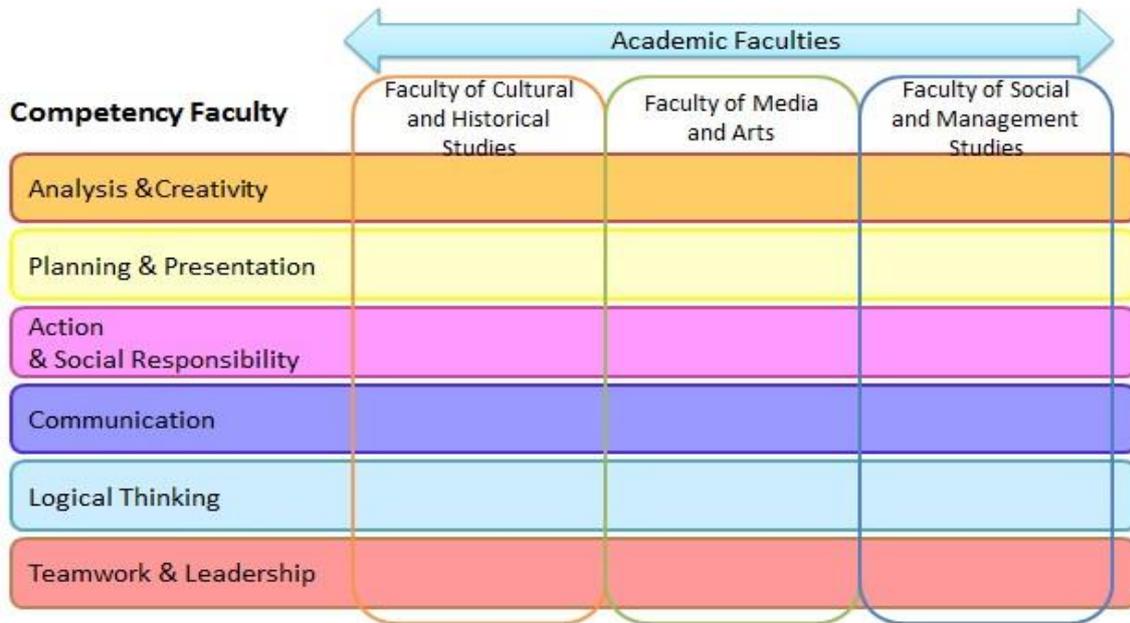

Figure 10 Conceptual Diagrams of the Competency Faculty Organizations

5. Syllabus

In the reform to the ability development education by C-PLATS, syllabi were modified to an ability-building type.

As illustrated in Figure 11, course contents, goals and learning outcomes of are shown separately in knowledge and ability sections. Figure 12 shows a course plan. On the left, each of the fifteen classes is classified as either lecture (knowledge) or seminar (ability-building). On the right, contents, target sub-competences and the level on the scale of OCD are to be stated about every class.

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