History, Present State, and Future Issues of CWIE in Japan

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Abstract
With a system of employment characterized by life-time employment and seniority wage, companies in Japan had been known to offer extended On-the-job Training (OJT) programmes to newly recruited workforce. This was one of the reasons why Japan has remained behind in the development of Cooperative and Work-Integrated Education (CWIE) among industrialized countries. However, the popularity of this practice started to decline due to slower economic growth particularly after the collapse of bubble economy in 1990s and there was a growing need for educational institutions to offer CWIE to supplement the company’s OJT. This trend was further encouraged by Japanese government’s support for CWIE programmes.

This paper describes the background history, present state, and future issues of CWIE in Japan. First, it shows how the transition from study-to-work for youth population has taken place since the Meiji Restoration of 1868, which brought about the modernization. Second, the present situation of CWIE is described and its reasons for falling behind in the popularity among the industrialized countries are discussed with reference to Japan’s socioeconomic situation such as rapid modernization and high demand for higher education. Thirdly, the suggestions are made in turn for the stakeholders of CWIE i.e. universities, companies, the government and students, so that Japan can catch up with the rest of industrialized countries in the development of CWIE.

The aim of the paper is to show how CWIE can be developed and modified to reflect needs of a particular country with own socioeconomic background, using Japan as an example.

Key word: CWIE in Asia, Internship, MEXT, Companies' response, Students' awareness

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Introduction

With an employment practice characterized by life-time employment and seniority wage, companies in Japan had been known to offer extended On-the-job (OJT) Training programmes to newly recruited workforce. Ironically, this was one of the reasons why Japan has remained behind in the development of Cooperative and Work-Integrated Education (CWIE) among industrialized countries. Given that an employees' turnover is low, a company has a high probability of obtaining the return to OJT investment. Furthermore, OJT can be more firm-specific than any training provided by CWIE. However, the popularity of this practice started to decline due to slower economic growth particularly after the collapse of bubble economy in 1990s when companies could no longer afford to invest in OJT as much as they used to. This was a great opportunity for educational institutions to offer CWIE to supplement the company’s reduced OJT. This trend was further encouraged by government’s support for CWIE or what was labelled as "career education" by the turn of the century.

This paper describes the background history, present state, and future issues of CWIE in Japan. Following this introduction, Section 2 describes the history of CWIE in Japan. The discussion is divided into two periods: the beginning of Japan’s modernization period since the Meiji restoration of 1868, when the country needed a large volume of skilled workforce to keep up with her modernization process, and the post-war (the Second World War) period since 1945, when the further industrialization was launched. Here the emphases of discussion are on: how what was originally called “industrial education” developed into CWIE, what distinguished CWIE for tertiary education from vocational education for secondary education, and the relationship between CWIE at educational institution and OJT at workplace. It is made clear in the process that industrial education gradually shifted from training of "high school leavers as blue collar workers" to "university graduates as white collar workers with a rise in demand for education and a demographic shift in industrial structure. Section 3 looks at the present state of CWIE in Japan. First, it explains the socioeconomic background that has led to underdevelopment in CWIE in comparison with other industrialized countries. Then, an analysis based government’s reports, particularly of Japan’s ministry of education is made. The reports cover such issues as a level of popularity of CWIE in Japan, what the government’s policies are, how companies see CWIE, and what the students’ responses are. They show that the government recognizes that Japan is behind in the development of CWIE and government policies are introduced to catch up with the rest of industrialised countries. And yet the level of awareness among the stakeholders of CWIE i.e. universities, companies and students is still low. In Section 4,
the remedies are suggested in order to develop CWIE in Japan. This is done for each of the stakeholder, i.e. universities, companies, government and students, in turn. General conclusion is that universities and government need to take care of the rules of CWIE, while companies and students need to be better informed about CWIE. This section also mentions about international CWIE and suggests closer collaboration among Asia countries. Conclusion appears in Section 5 to sum up the discussions.

2 History
2-1 Education at school
2-1-1 Since the modernization (Meiji Restoration) of 1868
The Meiji Restoration of 1868 was to transform Japan to a modern state. Among a series of new acts and regulations, the Educational System was enacted in 1872. After several amendments, the law was renamed as the School Act in 1886. It was upgraded and renamed as the Educational Act in 1879. Following this Act, compulsory education was introduced and set at 6 years from the age of 6 by the Primary school Act of 1907. As for industrial education, the Trade school Act was enacted in 1899, which covered schools for manufacturing, craft, commerce, agriculture, fishery, and merchant ship. The government was particularly keen on manufacturing schools and set up in 1894 the Trade School Government Subsidy Act to financially support the schools which require high running cost compared with ordinary schools. These schools were for young people who completed primary education, i.e. over 14 years old, and thus were equivalent to institutions of secondary education. Industrial education was extended to allow some trade schools to offer further studies into higher education by the Technical College Act of 1903 (See Ministry of Education, Culture, Sports, Science and Technology [MEXT], 1981).

2-1-2 Post-war period (Since 1945)
The educational system was reformed after the Second World War. Under the School Education Act of 1947, a new educational system was set up with 6 years of primary education, 6 years of secondary education and 4 years of higher education, and compulsory education was extended to from 6 years to 9 years, i.e. 6 years of primary education (Primary school) and first 3 years of secondary education (Junior high school). Following this change, industrial education was to be provided from 15 years old after compulsory education. In 1951, the Trade School Government Subsidy Act was replaced by the Industrial Education Promotion Act. This Act clarified meaning of industrial education, defined the role of government, set up industrial education
committees at national as well as local levels, and promised to provide financial backing (MEXT, 1981). Industrial education in higher education was introduced in 1976. This system provided Specialized Training Colleges for high school leavers from 18 years old to mostly 20 years old. Recently, this type of higher education institution has earned growing popularity. In 2014, among high school leavers 53.9% went to university and 17% to Specialized Training Colleges, leaving mere 17.5%, or one in five high school leavers, to opt for employment (School Basic Survey, 2014).

2-2 Training at work
2-2-1 Meiji period

The Meiji Restoration of 1868 guaranteed freedom of occupation. At the same time, opening of the country particularly to the West generated a large flow of modern technology. Initially starting from government-owned factories it eventually began to spread among the private sector. Soon supply of skilled labour required for the modern technology was becoming short of the growing demand. This caused particularly large private companies to retain the skilled workforce. Eventually, the prolonged working years made it possible to train the employees within a company through On-the-job Training (OJT) and Off-the-job Training (Off-JT). In this way, skilled labour workforce was formed and stayed in company (Sasaki, 2006).

2-2-2 Post-war period

After the Second World War, the Labour Standard Act was introduced in 1947 to guarantee employees reasonable conditions for wage, working hours and safety at workplace. Together with legalization of trade unions, it improved employees’ working conditions. The Act also explicitly specified employment standard and conditions for training apprentice at workplace. Companies soon began to train 15 years olds after junior high school for 3 years as apprentices. One of such companies was Toyota. Toyota set up an apprenticeship training centre in 1951 to recruit junior high school leavers at 15 years old, who were expected to form the core workforce of future. It is important to point out that these apprentices are employees and not students and thus are subject to labour laws.

The feature of these training centres began to change in 1960s, when the enrolment rate for high school rose rapidly. According to School Basic Survey, the enrolment rate for high school was 42.5% in 1950, which rose to 57.7% in 1960 and further to 82.1% in 1970. As a result, companies had to consider 18-years-old high school leavers rather than 15-years-old junior high school leavers as the main body of apprentices. As for the
15 years-olds, the apprenticeship training centre at Toyota, for example, offered a high school credit programme, so that they can be considered as a high school graduates after the completion of the training programme, which entitled them to proceed to university. Presently, this school is called Toyota Technical Skills Academy and after graduation the trainees are expected to work at Toyota, or if they so wish they can study further at a higher education institution of Toyota Technological Institute. However, it is essentially a non-educational institution. The academy charges no tuition fees and the trainees can receive an allowance of between 120,000 and 140,000 yen (=10,000 USD and 11,000 USD as of 2015) (http://www.toyota.co.jp/company/gakuen/).

The companies were to face further socioeconomic changes in 1970s and onward. One is the further rise in demand for education and the other is the demographic shift from primary to tertiary industries. According to School Basic Survey, the enrolment rate for universities and colleges rose from 10.3% in 1960 to 23.6% in 1970 and further to 37.4% in 1980. According to the Labour Statistics, while the percentage of labour force in the secondary industry stayed unchanged --- 28% in 1960, 35.2% in 1970, and 34.8% in 1980, that of the tertiary industry rose form 41.8% in 1960 to 47.3% in 1970 and further to 54.6% in 1980. It is easy to see with such socioeconomic changes the main focus of training has changed during these decades from "15-year-old junior high school leavers for manufacturing industry" to "22-year-old university graduates for service industry" --- equivalently, from training "high school leavers as blue collar workers" to "university graduates as white collar workers."

3 Present state
3-1 Socioeconomic background

As explained in the introduction, Japan falls behind in the development of CWIE among the industrialised countries (See 3-4 for the actual data on the present situation of CWIE). It is often argued that this is caused by the Japanese employment practice of “wage seniority” and “life-time employment.” Following the shortage of skilled labour during the early modernization period, as it was explained in 2-2-1, private companies needed to acquire skilled labour by themselves. In other words, each company, if it is large enough to sustain such a programme, created over a long period of time an employment relationship whereby it trains unexperienced school leavers and university graduates and they would remain as employees till retirement with their productivity and wage rising over time. Such an employment system characterized by wage seniority and life-time employment is said to form an “internal labour market” within a company (Doeringer & Poire, 1971). And this long term relationship is beneficial to both an
employer and employees, especially when the skill is firm-specific than general (Becker, 1964). It is not difficult to imagine CWIE has little use when an internal labour market prevails in a company.

Another reason for unpopular CWIE is that companies do not expect much from universities as providers of ready-to-work workforce. With a rise in demand for higher education, entering university has become almost the aim in itself and university once admitted is ironically referred to as “leisure land” to mean the “place to rest” before long and hard working life till retirement --- MEXT (2012) reported that in 2007 67% of university students in Japan spent less than 6 hours per week for studying compared with mere 15.6% in US, while OECD (2013) found that in 2011 a percentage of male employees working more than 50 hours a week was 38.8% in Japan compared to 15.5% in US, 18.1% in UK and 35% in Korea. Consequently, many companies do not expect university graduates to come with expert knowledge. Rather, they will train them when employment relationship starts. Thus educational credentials are used to screen the potential ability of students rather than as proof of specific expert skills.

However, the socioeconomic environment in Japan is becoming to change in at least two aspects. First, since the collapse of bubble economy in 1990s, companies are finding it difficult to finance OJT for new employees. This gives an opportunity for CWIE to supplement OJT. Second, with increasing demand for higher education and a large number of graduates as a consequence, their educational credentials do not fully function as signals for the students’ work performance levels. CWIE could provide a better signal through working experience. As a result, CWIE is beginning to be seen as supplementing OJT and academic credentials as an effective tool in transition from study to work.

3-2 The present structure of higher education system

At present, a high school leaver at 18 years old has 3 paths of higher education upon graduation at 18 years old --- University for 4 years, Junior College for 2 years, and Professional Training College for 2 years. Alternatively, one can opt for National Institute of Technology for 5 years at 15 years old. According to School Basic Survey, in 2010 there were 778 universities, 395 junior colleges, 2904 Professional Training Colleges, and 58 National Institutes of Technology, with the student numbers 2,559,191, 149,633, 564,640, and 55,827 respectively. This shows that most of students in higher education study at university. However, in 2010, the enrolment rates for undergraduate course and graduate school were 56.8% and the 13.4% respectively. This implies that a large majority of young people go to university but many decide to work after
graduation rather than to continue into graduate school.

3-3 Government’s position on CWIE

As pointed out in 2-1-1, the government’s industrial education started over 100 years ago under the Meiji Restoration to cope with the introduction of modern technology. Initially, it was provided to 15 years old after compulsory education. The age group of main subject of industrial education has gradually shifted upward, as the general educational standard rose. More specifically, it has shifted from providing “vocational education for blue-collar jobs to 15~18 years old, i.e. high school students” to providing “more comprehensive industrial education, or CWIE for white-collar jobs to 18~22 years old, i.e. university students.”

To the extent that provision of CWIE involves students, employees, and companies, this is a concern shared by MEXT, the Ministry of Health, Labour and Welfare, and the Ministry of Economy, Trade and Industry. But their approaches are somewhat different from each other. MEXT introduced a concept called “graduate competence” in 2008 and defined it as an ability to cope with working life after graduation, while the Ministry of Economy, Trade and Industry introduced a concept called “basic social skills” in 2006, which puts a slightly more emphasis on employability at work than learnt competency at university. The Ministry of Health, labour and Welfare emphasizes the personal development of employees and its bigger concern is existence of youth who are not in employment, education or training (NEET) and part-time employees who find it difficult to develop employment skills.

There is no doubt that MEXT has been the main player in the development of CWIE. It introduced a concept of CWIE in 1999, when its Central Council of Education used a term “career education” in its report (MEXT, 1999). Until then, a more common term was “internship.” Today these terms are used in Japan almost interchangeably. At the same time, career education needed to be distinguished from vocational education, following the shift from vocational education for blue-collar jobs to more general CWIE for white-collar jobs. MEXT distinguishes the two by defining vocational education as “education to nurture knowledge, skills, and attitudes necessary to pursue a particular occupation” and career education as “education to nurture ability and attitudes to obtain social and occupational maturity,” and expects universities to provide the latter role (MEXT, 2011).

The reason for the delay in development of CWIE in Japan was explained in terms of its employment practice earlier. But the position of MEXT also contributed to the underdevelopment --- it used to find it difficult to consider education as mere means to
obtain employment, as education has to be value-free and insulated from self-interests of companies. However, such concept seems to be receding. Most recently, MEXT speeded up its move to support career education in 2014 (MEXT, 2014). In the report titled “The basic approaches in promotion of internship,” it emphasized that internship defined as work experience at company plays an important role in making effective academic education as well as career education at university, thus actively supporting university-industry collaboration. The report also mentions “cooperative education” as a longer-term and remunerated programme led by university to be one of the effective type of internship, which has more resemblance to CWIE.

3-4 The characteristics of CWIE and its spread in Japan

MEXT published a report in 2013 about spread of internships among high education institutions in Japan, in which 748 universities were asked about their internship programmes in 2011(MEXT, 2013).

Several findings are worth mentioning. First, 70.5% of the universities (544 universities) ran internship programmes, while mere 2.2% of the total students participated in the programmes. These figures were much higher than those in the previous report of 1998 --- 23.7% and 0.6% respectively. Second, the durations of internships were asked and it was reported that 21.5% were for less than one week, 40.1% were for one to two weeks, 20% were for two to three weeks, 3.6% were for three weeks to one month, 5.8% went for one to three months, 3.3% went for three to six months, and 2.4% went for more than six months. Third, 61.8% of the students participated in internship in their third year (of four year undergraduate programme) and 59.9% during the summer vacation. And fourth, 161 universities had internship programmes with students receiving payment --- 143 universities with traveling expense, 115 universities with meal, and 66 universities with remuneration.

The general picture that appears from these data is that many universities offered internship programmes but very few students actually participated and most were for less than three weeks and without remuneration.

The report also mentioned briefly about oversea internships. 153 universities had such programmes with mere 2023 students participating, of which 43.7% went to Asia, 27.4% to North America, 16.2% to Australia and New Zealand, and 9.7% to Europe. This shows that Japanese student are not willing to go abroad for internship but if they did Asia is the most popular area.

3-5 Industry’s response, understanding and commitments
Tokunaga (2014) published a report based on questionnaires about internships conducted to 4302 companies with more than 5 employees in November 2013 and January 2014 and 1332 companies replied. The report categorised responses of companies according to company size defined by number of employees. Here are the main findings. First, 74.4% of companies with 5000 employees or more offered internship programmes, as well as 50% with 1000–4999, 36.7% with 300–999, and 31.3% of 300 or less. Second, two main purposes of accepting internship students are to introduce the industry, job, and company, which 78.2% of companies agreed, and to make social contribution by accepting the students, which 74.9% of companies agreed. Also to a lesser extent companies seem to use it as an opportunity to screen the ability of potential employees and as an opportunity to introduce company product to potential customers. And small and medium sized companies of 300 or less showed a higher percentage than the average at 21.3% in stimulating the existing employees by mixing with the students on projects. Finally, most common role of internship students are being an assistant to the employees, work shadowing at office or factory, working in a particular project, work shadowing of an employee, with slightly more emphases on projects at companies with 5000 or more and on assisting of an employee at companies with 300 or less.

The results may be summarized as follows: companies do not seem to think the students as making any contribution to them, but accept them as a contribution to the society. The only merit, if any, would be to know their potential employees and to make them future customers.

3-6 Students’ awareness: responses from 15~29 year-old

At the end of 2011, Cabinet office conducted a questionnaire to 3000 young people with ages between 15 and 29 (Cabinet Office, 2012). The findings relevant to CWIE were as follows. First, two main reasons to work are to make money at 63.4% and to support own life at 51%, while other issues such as realization of one’s dream, finding purpose of life, or serving others and society were not ranked high. Second, 52.9% thought that family life has to be prioritized over work and yet 84.4% thought that there are few companies that the work-life balance can be maintained. Third, 49.9% thought that their own experience abroad have no effect on study or work and 54.7% did not want to work abroad. Fourth, 45.3% thought internship is worth doing. Finally, asked about the job search, 49.4% felt the educational credentials were over-emphasized, 48.4% felt it was too long and tiring, and 41.1% felt that study time had to be unnecessarily sacrificed.
The result portrays the young people as more self-centred and less philanthropic, family loving and “non-workaholic,” and domestic and not willing to take international chance. As for job search, they seem to find it unnecessarily consuming but only a half of them find CWIE (internship) as a remedy. Students are not well-informed about CWIE and it would be a job of universities to explain about CWIE.

3-7 Different responses among universities, companies and students on internships

The Ministry of Health, Labour and Welfare published a report on internship in 2004 (Ministry of Health, Labour & Welfare, 2005), in which questions were asked to 40 universities, 1210 companies, as well as 902 students. One of the interesting features of this investigation is that difference of responses among the stakeholders of internship can be highlighted. There are three issues of particular interest. First, the purpose of internship programme was asked. Universities emphasized the importance of hand-on experience of working, of feedback to academic interest, of knowing more about oneself, of responsibility at work. Companies too listed hand-on experience as an important element but otherwise were more concerned about their own interest such as making own company known, helping their younger employees to develop as mentors, establishing contacts with local universities, and vitalizing own workplace by temporary introduction of new workforce. Students were less clear and specific about purpose --- their answers centred around issues such as what is work, what is expected in job search, and to experience a job he/she wishes to take up.

Second, they were asked about possible ways to make internship more effective. All three stakeholders commented that pre-internship orientation on workplace manners and rules as well as on the content of internship was necessary. On the other hand, opinions differed such that universities found post-internship reflection classes to be important, companies thought students should be given rewarding tasks, and students wanted more interaction with the employees.

Third, questions on duration of internship were asked. 82.5% of universities replied that two weeks is the most convenient while 52.5% replied one month would make it more effective. 75.8% of companies replied one to two weeks is most convenient, while 59.7% replied three weeks to three months would make it more effective. There seems to be a difference between the actual and ideal duration of internship --- both universities and companies feel that the present type of internship is too short. And 60.8% of students replied that the most convenient duration is one to two weeks.

The results could be summarized as follows. First, while universities, companies, and students all agree that the hand-on experience is useful, there is some discrepancy
between universities and companies about the point of focus --- while universities are more concerned with students’ personal development, companies are more concerned with direct benefit to themselves. In between, students are less aware of the value of internship. Second, as for making the programme more effective, all agreed that pre-internship preparation can raise its effectiveness. Universities tend to have a longer-term perspectives while companies hopes for a quick benefit from internship programmes. Students felt that more personal contacts with employees could help. Finally, a considerable number of universities and companies thought that a typical two-week internship is convenient but too short to make it worthwhile and need at least a month. However, this idea is not well-shared by students, who think that present system is long enough.

4 Future issues and remedies
4-1 What should the stakeholders do?

Based on the discussions so far, the evidence shows Japan is clearly left behind in the development of CWIE among the industrialized countries. With 70.5% of universities offering CWIE in the form of internship programmes, the concept is beginning to establish itself. However, that programmes typically last not more than two weeks and unpaid and that mere 2.2% of the students take such meagre programmes tells there is still a long way to go. Here is a list of suggestions for developing CWIE in Japan by stakeholders.

4-1-1 Universities
(1) A long-term internship with remuneration

In 3-7, it was stated that both universities and companies found internship programmes can be more effective if the duration is extended from up to few weeks to over several months. This, however, would keep away the students from part-time jobs for an extended period of time and cause a large loss of income. This is supported by a report in Statistics on Student Life that income from a part-time job is an important part of students’ income (Japan Student Service Organization, 2011). In fact, students were content with the present length of internships of one to two weeks. In order to maintain income, internship service needs to be remunerated. Thus, universities in collaboration of companies need to set up a longer-term paid CWIE programme.

(2) Understanding and support from other academic and administrative staff

It needs to be understood by all university staff that CWIE has positive and not negative effect on academic studies. For example, Tanaka (2014) statistically showed in a Japanese university that taking CWIE actually improves student's GPA, and Tanaka
and Carlson (2013) showed that such a result holds also in a university in Hong Kong. Sovilla and Varty (2011) also points out that more support is needed from university.

(3) Training CWIE staff

Even in countries and universities with a long history of CWIE, many teaching and academic duties in CWIE are performed by academics and administrative staff who are not necessarily its experts. University needs to introduce a training programme so that it can eventually be organised and administered by the CWIE experts (Sovilla & Varty, 2011).

4-1-2 Companies

Generally, there are three main merits that companies often mention, when they are asked about the receiving students on internship programme --- (1) matching of student and company, (2) lower labour cost by employing students, and (3) getting new ideas and concepts from university research. As pointed out in 3-5, only (1) is partially relevant in Japan, while (2) and (3) are not. It is the job of universities to inform companies about these merits.

4-1-3 Government

There are two issues to be clarified in order to popularize CWIE. One is a treatment of credits for CWIE subjects. CWIE subjects with a large part spent on work experience cannot be credited using the same criteria as academic subjects. The flexibility of interpretation is called for by MEXT. Another is the status of students under internship programmes. At the present, it is difficult to define the status of the “student-employee” and particularly a treatment of social insurance become complicated and could hamper the development of CWIE. A further and swift effort to introduce a flexible interpretation is called for so that students can participate in internship programmes without complications.

4-1-4 Students

Evidence in 3-6 and 3-7 suggests that students are not particularly keen to take CWIE courses. They need to see it as investment in education alongside academic programme, which generates pecuniary and non-pecuniary returns in future. For them, a long-term perspective is called for to consider CWIE as an act in a lifelong planning. As for academic education, a large volume of literature and evidence are available to prove the effectiveness of educational investment (Tanaka, 2014).
4-2 Other issues: International CWIE and English language

In the world of globalization, it is rather worrying to know young Japanese are not enthusiastic about going abroad to work, as reported in 3-6. It is even more so as the country totally depends on international trade. One obstacle seems to be English language. In Japan, students start learning English from 13 year old. With nearly everyone going to high school, this means 6 years of English language education or 10 years for university graduates. And so much of unpopularity is rather puzzling. At least, students need to be constantly reminded of importance of English language as means of communication. One worth mentioning fact is that a half of students in international internship programmes go to Asian countries as reported in 3-4. There are three possible reasons for this outcome --- distance, culture and language. It takes much less time and cost to go to Asian county than to North America or Europe. Asian countries share culture and values with Japan to greater extent than with rest of the world. And the language of communication in these countries may be English but it is often not the native language and thus problem identification and solutions of communicating in English may be shared. This suggests further collaboration among Asian countries in CWIE development to be beneficial.

5 Conclusion

This paper described the history, present state and futures issues of CWIE in Japan. The history of CWIE can be traced back to the Meiji Restoration period of 19 century, when Japan launched her modernization. In order to import technology from the West, it was necessary to provide industrial education to the workforce. But as demand for education and higher education in particular rose and the tertiary industry started to take over the primary industry as the main player in the post-World War II period, the need for industrial education had to shift its focus from vocational education to CWIE, or what is named as career education in Japan. The society as a whole --- government, universities, companies and students, alike, were slow to respond to this socioeconomic change. One of the reasons was that with a life-time employment system the role of training employees has long been played by companies. However, as Japan’s high economic era ended and with a collapse of bubble economy, companies found it difficult to provide extended OJT. This is where universities find an opportunity to offer CWIE.

Government started a move to support CWIE development at the turn of century. However, relevant reports indicate that the effects are still not felt among universities, companies and students. Work experience as a core of CWIE is too short and unpaid.
Companies do not find students on work experience term as someone to bring merits to them. And many students themselves do find CWIE in the form of internship to be profoundly valuable.

The paper suggests the remedies for developing CWIE in Japan. The government needs to understand that CWIE is as important as academic programme and the former could strengthen the later, so that it allows universities to create curriculum that makes running of CWIE programmes smooth. Universities is required to encourage their staffs to have better understanding of CWIE and to set up programmes to educate CWIE experts. As for companies and students, information is too limited to support and participate in CWIE despite its merits.

Although this paper specifically analysed a case of Japan, there must be common issues if a country falls behind in the development of CWIE or is in need of further development. And the suggested remedies may be applicable.

Bibliography (italics: publication in Japanese)


(Statistics: in Japanese with English translation)