

Strategic curriculum in the Faculty of Maritime Sciences, Kobe University, aiming at fostering and enhancing motivation toward Maritime Science

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Abstract

In Japan, maritime related educational organizations are currently facing a difficult situation in acquiring potential young people who will shoulder the responsibility for the maritime society in the near future. The Faculty of Maritime Sciences, Kobe University, has started using a new curriculum since the first semester of 2004. A number of subjects provided in the first one and half years after enrolment are intended to give motivation towards maritime science to the students who entered the faculty without sufficient knowledge of maritime science to meet the educational objectives of the Faculty. That is mainly due to the university admission system in Japan, i.e., high school students tend to select his or her university based on the score of the common test conducted annually by the Government. In this paper, a strategic curriculum provided by our faculty is presented to show how the motivation and knowledge of maritime science could be fostered and enhanced in conjunction with a strategic admission system. Our curriculum in the first semester after enrolment aims to entertain students with the sea and ships using a high performance cruiser, cutters, etc., followed by teaching fundamentals and common sense in the field of maritime science. Students learn those introductory subjects in the first one and half years. Then, they are given an opportunity to select their preferred department from the three departments of *Maritime Technology Management*, *Marine Transportation Systems* and *Marine Engineering*. As far as the Department of *Maritime Technology Management* is concerned, which has the primary role of fostering seafarers, almost thirty percent of the students are enrolled through a recommendation based admission system in order to welcome students who have enough enthusiasm towards maritime science at the time of the entrance examination. The strategies introduced here would be a great help for other maritime education organizations where the number of applicants tends to decrease.

Keywords: strategic curriculum, decrease of young people, Package Admission System, Common Entrance Examination, Seafarer's Certificate.

1 Introduction

1.1 Growing difficulty in acquiring potential students

The population of 18 year old young people reached a peak at the beginning of the 1990s. It is continuously decreasing. By 2007, the number of applicants is predicted to be equal to the total admission capacity of universities and other higher education institutes in Japan. Some universities have already been forced to close, and others are confronted with serious financial problems. Figure 1 illustrates the transition of the situation for Japanese universities over these thirty years.

According to a recent report, only 14% of high school students study physics. As a result, the number of students who want to learn at the faculties related to science and technology is decreasing. These situations also put Kobe University, Faculty of Maritime Sciences (KUFMS) into a difficult situation in acquiring potential students.

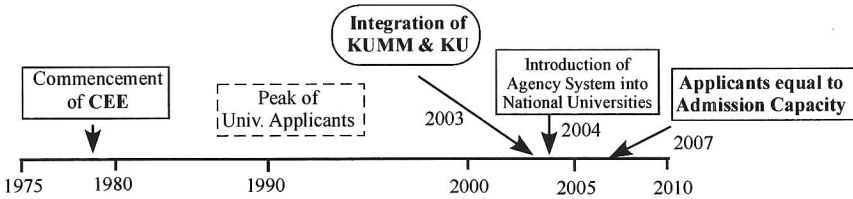


Figure 1: Transition of the situation of Japanese universities.

1.2 Situation of KUFMS

Kobe University, Faculty of Maritime Sciences (KUFMS), originated from Kobe University of Mercantile Marine (KUMM). KUMM was unified with Kobe University (KU) two years ago. KU is one of the largest universities in Japan and has a high reputation from educational and research points of view.

In the past, when the occupation of a seafarer was regarded as superior to others in many respects such as income and working conditions, maritime universities in Japan could have easily acquired potential students without any specific strategy. Such a situation was the same in the case of fishery high schools. However, the number of young people who want to be seafarers started to decrease in accordance with the rapid economic growth in Japan. This is mainly because they regarded the daily life of a seafarer as a severe one, which also creates a serious situation to KUFMS. The primary mission of KUFMS is to foster young people working for maritime and related societies as well as seafarers. Therefore, it is significantly important to acquire competent students with a sufficient scholarship at the time of enrolment.

2 Admission system in Japan and how students select universities

2.1 Admission system in Japan

Ordinarily, university applicants take the entrance examination in the following manner. Following the *Common Entrance Examination* (CEE) conducted by the Ministry of Education, they take the entrance examination imposed by the target university. Although a number of universities, especially private universities, select students only based on the CEE score, most national universities adopt the aforementioned procedure.

Another popular admission system is *Admission by Recommendation* (ABR). A considerable number of universities introduced the ABR system more than twenty years ago. The ABR applicants are not allowed to take the examination of other universities once they pass the examination. The ABR system has brought a great advantage namely that universities can acquire students with enthusiasm and interest towards the education and research fields provided by each university. On the contrary, the CEE scores of the applicants tend to be lower compared with those of the students following the ordinary entrance examination system.

2.2 How students select universities

In Japan, universities are roughly divided into two categories according to their specialized fields, i.e., the fields of science and technology and the fields of human and social science. University applicants ordinarily select their target university from either field. Needless to say, the applicant's interest and enthusiasm toward the education and research fields are the most decisive factor when selecting universities. At the same time, the CEE score has become a crucial factor as well.

2.3 Merits and demerits of CEE

The *Common Entrance Examination* (CEE) was introduced into the admission system in Japan about twenty-five years ago. The CEE has continuously been conducted all the time up to now while being subjected to various modifications. It is worth noting that the introduction of the CEE has changed the Japanese education system in many respects. The original intention of the CEE was to guarantee the fundamental scholarship of university applicants. Undoubtedly, the CEE has brought a great merit to the applicants. Based on the CEE score, they can choose the target university with a high possibility for success.

At the same time, the CEE has created a new university ranking system. That is, every university has come to be ranked according to the CEE scores of their applicants. In other words, through twenty-five years of execution, the CEE might have become a kind of governor of the entrance examination system in Japan. This situation has significantly changed the standard of how an applicant selects the target university. One can say that the selection of a university not

only depends on the interests toward the education and research fields but also the CEE score of each applicant. Frankly speaking, some applicants tend to take the examination of the university with which they have the highest likelihood of passing. In addition, high schools and preparatory schools also follow the stream stated above. In order to obtain as many successful applicants as possible, they sometimes guide the students according to the CEE score when deciding the target university.

2.4 Enthusiasm and interests toward maritime science

It is defined by KUFMS that the scientific principles of *maritime science* are fundamentally supported by science and technology and closely related to social science. Our applicants seem to consider KUFMS as one of the faculties relating to science and technology fields. Meanwhile, KUFMS is sometimes regarded as a faculty aimed at fostering seafarers from its history. Although bringing up seafarers is its most important mission as an educational organization, the real situation is that only twenty-five percent or less of the faculty graduates become seafarers nowadays. Most of the other graduates contribute to the maritime society or its related fields. Considering the serious situation explained so far, therefore, it is significantly important for KUFMS to acquire competent students by means of an effective admission strategy and to offer an attractive curriculum enhancing the motivation of the freshmen.

3 Strategies for acquiring potential students and offering effective curriculum

3.1 Outline of KUFMS's strategy

Taking account of the current situation explained in Sections 1 and 2, KUFMS has introduced the following admission policy and introductory education system. Figure 2 schematically shows the outline of KUFMS's strategy.

3.1.1 Admission

In addition to young people having a natural interest in maritime science, KUFMS is making efforts to acquire potential students with sufficient scholarship, who are attracted to science and technology and also have some interest in the sea and ships. The strategy is to welcome applicants from a larger population.

3.1.2 Introductory education

By providing an attractive introductory curriculum on maritime science, KUFMS intends to stimulate the interest of freshmen towards maritime science.

The strategy is that the motivation towards maritime science could be enhanced through an effective and attractive curriculum, while the improvement of the students' scholarship on fundamental subjects, such as mathematics, physics, etc., is fairly difficult after the enrolment.

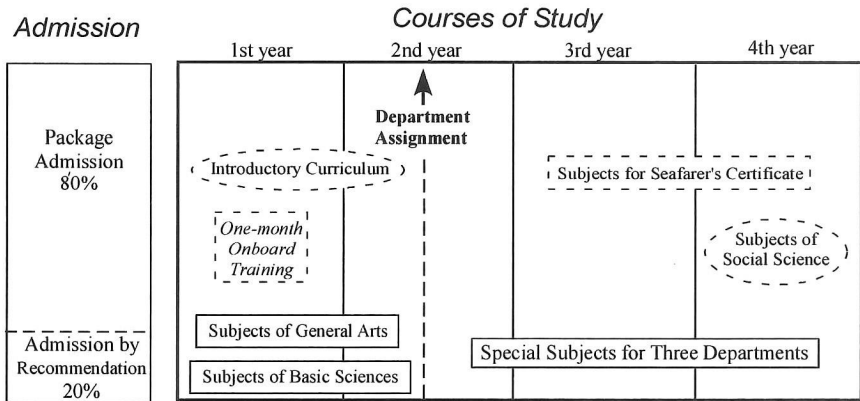


Figure 2: Outline of KUFMS's strategy.

3.2 Concrete plans

3.2.1 Package admission system

Students are admitted through the *Package Admission System* (PAS), which means that they enter KUFMS without their department being assigned at the enrolment. One and half years later, each student chooses his or her department. If the number of students exceeds the capacity of each department, the determination is made on the basis of the number of credits that the students have received in the first year. This admission system provides several advantages to both KUFMS and the students. KUFMS can acquire competent students with a high scholarship from a larger population. Besides, this system urges the students to study hard in order to be assigned to their target department.

For students, they can choose their department after they have learned the fundamentals of maritime science through introductory subjects in the first year. Accordingly, students can continue learning in the department in which they really want to learn.

3.2.2 Attractive subjects for enhancing the motivation toward maritime science

Three subjects aimed at enhancing the students' motivation are prepared in the first year. *Marine Sports* and *Boat Handling, Learn from the Sea*, and *Swimming* have two objectives, i.e., for students to enjoy and learn about the sea and ships. Another subject, *General Study I*, is also important, in which students can learn the outline and the objectives of the three departments of KUFMS through a series of lectures provided by twelve teachers specializing in different research fields. These four subjects intend to offer sufficient information for the students when selecting his or her department in the second year.

3.2.3 One-month onboard training in the first summer

Experience of onboard ship training enables the students to learn what maritime science is. For students having any difficulty in the onboard ship training from

physical or mental points of view, alternative short-term ship training called the *Onboard Seminar for Maritime Science* is prepared by using KUFMS's training ship, FUKAE-MARU. The period is usually less than one week. Additionally, those students who took the credit of the onboard seminar and hope to get a seafarers' certificate are urged to take the *Onboard Seminar for Maritime Science* in the next summer.

3.2.4 Opportunity to learn Social Science

A special subject group, which is commonly open for three departments, gives an opportunity for any student to learn several subjects provided by Faculties of Law, Economics and Business Administration. This unique curriculum is in line with KUFMS's education policy.

3.2.5 Equal opportunity to be a seafarer

The *Department of Maritime Technology Management* has the priority in fostering seafarers. The students assigned to the other departments are also given an opportunity to take credits required to be seafarers. This system increases the probability for the Maritime Society to acquire capable seafarers.

3.2.6 Class teacher system

Two or three teachers are assigned as a *Class Teacher* to each department in order to guide students in their study, campus life and so on. Class Teachers also help students to find jobs at graduation. This thoughtful system follows KUMM's tradition.

4 Analysis and estimation of current status

4.1 Entrance examination

The average CEE score of the applicants distinctively increases after integration, which means the success of the integration program and the introduction of the *Package Admission System*.

4.2 Students' records in the new curriculum

Records of the first students of KUFMS after the integration are slightly better than those of the former KUMM's students.

4.3 Assignment of students to three departments

KUFMS consists of three departments, *Maritime Technology Management*, *Maritime Transportation Systems* and *Marine Engineering*. Each department has the prescribed student numbers of ninety, fifty and sixty. In the case of *Maritime Technology Management*, the number of applicants was a bit smaller than the prescribed one. Just after enrolment, almost half the freshmen hoped to be *Marine Engineering* students. It is considered, therefore, that the situation has been improved due to our introductory curriculum. However, further efforts

should be made to provide a better education system for freshmen. Incidentally, *Maritime Technology Management* students can select either the *Navigation* course or the *Ship Engineering* course at the time of department assignment.

5 Concluding remarks

Evaluation of KUFMS's strategy is to be done at the graduation of the first students. KUFMS is determined to take any possible countermeasure to improve the education quality even in the progress of the current curriculum.

Finally, KUFMS has the confidence that the strategies proposed here make it possible to complete the mission of fostering competent graduates working for domestic and international maritime societies.

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