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# Effects of Career Guidance on Promoting Students' Job Self-Efficacy in Technical High School: A Longitudinal Case Study in Japan

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## ABSTRACT

In Japan, technical high school teachers are implementing career guidance in order to promote students' consciousness of self-actualization and to enhance employment awareness. However, the effects of such career guidance on promoting students' job self-efficacy were not obvious due to the lack of longitudinal study. So, in this research, a longitudinal survey of students' job self-efficacy was conducted on the 12th grade students. As a result of multi-regression analyses, significant effects of "mock interview" and "exchange meeting with graduates" on promoting "self-efficacy of adaptive competence" were indicated. Also, an effect of "exchange meeting with graduates" on promoting "self-efficacy of professional competence" was significant, too. This study suggests that career guidance should include real interaction and communication to promote students' job self-efficacy. From these results, recommended strategies for career guidance in technical high schools are discussed.

**Keywords:** Technical high school, career guidance, job self-efficacy, longitudinal case study, Japan

## INTRODUCTION

The purpose of this article was to examine the effects of career guidance on students' job self-efficacy. In Japanese technical high schools, curricula are drawn up for students to acquire professional knowledge, technical skills, and qualifications necessary to enter engineering schools in the future. The present career guidance program provides the students with the opportunity to recognize relationships between specialized fields and industries and to develop visions for their future. According to the Ministry of Education, Culture, Sports, Science and Technology (Government of

Japan, 2004), the goal of career guidance is "to think about how they want to live," "to have a sense of purpose about their future," and "to acquire the ability to make choices about their future careers." In other words, career guidance is not only to guide students to find jobs, but also to involve them in planned and systematic educational activities between entrance and graduation. Additional guidance after graduation may be needed to assist them in their career choices. Basically, in technical high schools, students are encouraged to examine their characters, aptitudes, abilities, interests, and concerns to prepare themselves for their future occupations based on their confidence about their learning experiences. In the 12th grade, the students will be asked to identify the most suitable career options for them. This will reinforce what each student has learned in the $10^{th}$ and $11^{th}$ grades. Through this process, students gradually decide on their future prospects and develop job self-efficacy.

According to Bandura (1977), self-efficacy means recognition of a possibility to pursue a specific action. Therefore, job self-efficacy in this context can be defined as the recognition of the possibility for technical high school students to appropriately pursue their future occupations. Regarding the relationship between students' career selection and self-efficacy, Taylor and Betz (1983) indicated that a student with high self-efficacy in career selection positively performed the action of choosing his/her career. Conversely, a student with low self-efficacy in career selection avoided or insufficiently performed the action of selecting his/her career. In Japan, Matsumura et al. (1994) investigated the behaviors of teachers and guardians in relation to the career guidance at academic high schools. Also, Tominaga (2000) studied female university students' self-efficacy with regard to career selection. However, the effects of career guidance on job self-efficacy in technical high school students have not been sufficiently examined yet.

In a previous study, Yamao and Moriyama (2010) analyzed the actual status of job self-efficacy in technical high school students in Japan. Consequently, they found two main factors in job self-efficacy of technical high school students: "self-efficacy for adaptive competence" and "self-efficacy for professional competence." Self-efficacy for adaptive competence was the efficacy brought by students' development of the basic competence required to adapt to social environments. Self-efficacy for professional competence was the efficacy brought by students' acquisition of professional knowledge, skills, and qualifications related to specific industrial fields. They also found that both the self-efficacy for adaptive competence and for professional competence were higher in students with higher consciousness of career. The relationship between job's self-efficacy and career maturity in technical high school students was also investigated (Yamao & Moriyama, 2012). Thus, the previous study revealed critical factors to develop job self-efficacy which include career concern, career planning, and career autonomy. In the present study, the researchers chose to investigate the effects of career guidance for the 12th grade students on their job self-efficacy in one technical high school as a case study in Japan.

## METHODS

### Subjects

In this case study, we conducted a survey on 124 12th grade students (121 male and 3 female students) at a technical high school in Osaka City, Japan. Of the 124 students, 44 students were in the mechanical engineering course, 24 in the electrical and electronic engineering course, and 56 in the chemistry course. The final number of valid responses was 116 (93.5%, 113 male and 3 female students). Of the 116 students, 42 students were in the mechanical engineering course, 19 in the electrical and electronic engineering course, and 55 in the chemistry course. Table 1 shows the career guidance activities for the 12th grade students. The Japanese school year begins in April and ends in March next year, and the actual career choice of each student is determined by October or November.

### Instrument and Procedure

The questions or items in the instrument were set as follows: (1) opinions on school experience (8 items, a four-point scale); (2) opinions on career guidance (9 items, a four-point scale); and (3) Job self-efficacy scale for technical high school students, which was developed in the previous study in 2010 (two factors and 11 items, a five-point scale).

In order to understand the students' opinions on school and lessons, the following five items were investigated (the investigation was performed in May):

Item 1: Do you satisfy with your present school life?
Item 2: Do you like industry-related subjects?
Item 3: Can you understand industry-related subjects?
Item 4: Do you satisfy with extracurricular activities, such as club and student's council activities?
Item 5: Do you have friends among your peers at school?

In order to understand the students' reaction to the career guidance activities that were occasionally performed in 12th grade, the following eight items were investigated:

Item 1: Survey on desired career
Item 2: Guidance for getting a desirable job
Item 3: Mock interviews
Item 4: Exchange meetings with graduates
Item 5: Mock tests for career
Item 6: Lectures on synthetic personality inventory (SPI)
Item 7: Review of advertisements for help
Item 8: Lectures on business manners

For each item, the students were asked to answer the following question: "Was awareness about your career deepened?" using a four-point scale. In the four-point scale, 4 meant "very much," 3 meant "a little," 2 meant "not very much," and 1 meant "not at all."

***Job Self-Efficacy Scale for Technical High School Students***

The job self-efficacy scale for technical high school students developed by Yamao and Moriyama (2010) in their previous study was used. This scale consists of six items related to the self-efficacy for adaptive competence and five items related to the self-efficacy for professional competence as follows:

Item 1: I believe I have acquired an ability to concentrate on any activity, so I am confident I will be able to perform my future job.
Item 2: I believe I have acquired an ability to work cooperatively with others, so I am confident I will be able to perform my future job.
Item 3: I believe I have acquired a broad base of technical knowledge, so I am confident I will be able to perform my future job.
Item 4: I believe I have acquired an ability to come up with ideas for any subject, so I am confident I will be able to perform my future job.
Item 5: I have practical experience performing exercises and experiments related to my specialized field, so I am confident I will be able to perform my future job.
Item 6: I believe I have acquired the habits and behaviors necessary to maintain safe and organized conditions when tackling any activity, so I am confident I will be able to perform my future job.
Item 7: I believe I have acquired knowledge and skills related to my specialized field, so I am confident I will be able to perform my future job.
Item 8: I believe I have acquired the ability to perform my work with self-discipline no matter what the activity, so I am confident I will be able to perform my future job.
Item 9: I am interested in my specialized field, so I am confident I will be able to perform my future job.
Item 10: I understand the importance of setting goals and making an effort to pursue those goals when tackling any activity, so I am confident I will be able to perform my future job.
Item 11: I have obtained the qualifications required to work in my specialized field, so I am confident I will be able to perform my future job.

Items 1, 2, 4, 6, 8, and 10 were related to the self-efficacy for adaptive competence. Items 3, 5, 7, 9, and 11 were related to the self-efficacy for professional competence. For these 11 items, a five-point scale was used. In the five-point scale, 5 meant "I agree very much," 4 meant "I agree a little," 3 meant "I cannot decide," 2 meant "I do not really agree," and 1 meant "I do not agree at all."

Table 1: Career guidance program for the 12th graders at a Technical High School

| Months | | Events | Notes |
|---|---|---|---|
| April | The middle | Job readiness test | |
| | | Research of career | |
| May | The end | Distribution of career guidance manual | |
| | | The first mock test for career | The last day of the mid-term exam |
| | | Career guidance for the students | |
| June | | Mock interviews | 6/7 – 6/25 |
| | | Exchange meetings with graduates | |
| July | The beginning | Starting to receive job offers | |
| | | The second mock tests for career | The last day of the term-end exam |
| | | Examining job offers | |
| | The middle | Distribution of unified forms | |
| | The end | Lectures on SPI | |
| | | The third mock tests for career | |
| August | The beginning | Adjustment meeting with students | |
| | | Lectures on business manners | |
| September | The beginning | Sending job applications | |
| | The middle | Examinations for employment | |
| October | The beginning | The starting of recommendation exams for vocational schools | |
| November | The beginning | The starting of recommendation exams for university | |
| | | The starting of recommendation exams for junior college | |
| December | The beginning | Sending letters of thanks for unofficial employment | |
| January | The end | The starting of general entrance exams for colleges and vocational schools | |
| | | Distribution of the booklet titled "You will soon be a freshman!" | |

## RESULTS AND DISCUSSION

### Students' Opinion about School Experience

In order to understand how the students perceive about their school life, the ratio of positive responses (4: "very much" and 3: "a little") for lessons and school life were tabulated in Table 2. Consequently, the ratio of positive responses was high for "Do you have friends among your peers at school?" and "Are you satisfied with your present school life?" (see Table 2).

Table 2: Opinions on school experience

| Consciousness about learning in classes | Positive | | Negative | |
|---|---|---|---|---|
| | Frequency | Rate | Frequency | Rate |
| I like to learn industrial technology | 54 | 46.6% | 62 | 53.4% |
| I can understand the principles of industrial technology | 59 | 50.9% | 57 | 49.1% |
| | **Positive** | | **Negative** | |
| Consciousness about school life | Rate | Frequency | Frequency | Rate |
| I am satisfied with my school life | 79 | 74.1% | 37 | 31.9% |
| I am satisfied with extra-curricular activities such as club and students council | 58 | 50.0% | 58 | 50.0% |
| I have good relations with my friends at my school | 100 | 86.2% | 16 | 18.8% |

**Changes in Perceptions about Career**

The changes in perceptions resulting from the career guidance activities in the 12th grade were analyzed. In June and July, the average for responses to "survey on desired career," "mock interviews," "exchange meetings with graduates," and "mock tests for career" using the four-point scale were between 3.16 and 3.83 (see Table 3). However, in the period between July and September, the average for responses to "lectures on SPI," "lectures on business manners," and "mock tests for career" using the four-point scale were relatively low between 2.17 and 2.59 (see Table 4).

In October and November, the examination results for employment were released and the career of each student was determined. The career guidance activities that had been performed throughout the year were analyzed in February. Consequently, the average to the nine items related to perceptions about career is between 2.58 and 2.87 (see Table 5).

Table 3: Changes in perception about career (July)

| Changes in perception about career | | |
|---|---|---|
| Survey on desired career | Average | 3.16 |
| | SD | 1.20 |
| Guidance for getting a desirable job | Average | 3.21 |
| | SD | 1.10 |
| Mock interviews | Average | 3.83 |
| | SD | 1.08 |
| Exchange meetings with graduates | Average | 3.45 |
| | SD | 1.23 |
| Mock tests for career | Average | 3.16 |
| | SD | 1.10 |

Table 4: Changes in perceptions about career (October)

| Changes in perception about career | | |
|---|---|---|
| Lectures on synthetic personality inventory (SPI) | Average | 2.17 |
| | SD | 1.09 |
| Review of advertisements for help | Average | 2.59 |
| | SD | 1.08 |
| Lectures on business manners | Average | 2.47 |
| | SD | 1.07 |
| Mock tests for career | Average | 2.40 |
| | SD | 1.06 |

Table 5: Changes in perceptions about career (February)

| Changes in perception about career | | |
|---|---|---|
| Survey on desired career | Average | 2.78 |
| | SD | 0.91 |
| Guidance for getting a desirable job | Average | 2.77 |
| | SD | 0.90 |
| Mock interviews | Average | 2.87 |
| | SD | 0.98 |
| Exchange meetings with graduates | Average | 2.58 |
| | SD | 0.98 |
| Mock tests for career | Average | 2.67 |
| | SD | 0.96 |

**Classification of Students in terms of Final Career**

Regarding final career, the students were classified into three groups. The first group consisted of students who obtained jobs related to their specialized fields (students with a related field of employment). The second group consisted of students who obtained jobs unrelated to their specialized fields (students with an unrelated field of employment). The third group consisted of students who entered higher level of education (university, college, vocational school and so on). Consequently, the number of students with a related field of employment, students with an unrelated field of

employment, students who entered higher level of schoolings, and that of students whose jobs were not yet determined were 49 (42.2%), 37 (31.9%), 24 (20.7%), and 6 (5.2%), respectively.

**Changes in Job Self-Efficacy**

The changes in job self-efficacy in the 12th grade were analyzed using the five-point scale. Consequently, the average response to the items related to the self-efficacy for adaptive competence varied in a range of 3.15−3.30 and that of the items related to the self-efficacy for professional competence varied in a range of 2.98−3.19. The ranges of these averages were narrow, and no extreme changes were observed in the 12th grade (see Table 6).

Table 6: Changes in job self-efficacy

| | **May** | | **July** | | **October** | | **February** | |
|---|---|---|---|---|---|---|---|---|
| | Average | SD | Average | SD | Average | SD | Average | SD |
| Self-efficacy for adaptive competence | 3.15 | 0.83 | 3.26 | 0.9 | 3.30 | 0.94 | 3.30 | 1.00 |
| Self-efficacy for professional | 2.98 | 0.77 | 3.17 | 0.99 | 3.19 | 0.99 | 3.15 | 1.01 |

**The Differences between Final Career and Job Self-Efficacy**

The average scores to the items related to self-efficacy for adaptive competence of the students, except those whose jobs were not yet determined, were obtained each month for a full year using a one-way analysis of variance. Consequently, no significant differences were observed among students with a related field of employment, those with an unrelated field of employment, and those who entered higher-level of education (see Table 7). However, the main effect was significant in the items related to self-efficacy for professional competence in July ($F(2,107) = 4.29$, $p < 0.05$) (see Table 8).

Table 7: The differences between final career and job self-efficacy

| Self-efficacy for adaptive competence | | Students with a related field of employment (n=49) | Students with an unrelated field of employment (n=37) | Students who entered higher level of education (n=24) | ANOVA |
|---|---|---|---|---|---|
| May | Average | 3.18 | 3.00 | 3.37 | F(2,107)=1.43 |
| | SD | 0.76 | 0.91 | 0.92 | n.s. |
| July | Average | 3.43 | 3.08 | 3.21 | F(2,107)=1.63 |
| | SD | 0.75 | 1.04 | 0.96 | n.s. |
| October | Average | 3.34 | 3.21 | 3.33 | F(2,107)=0.22 |
| | SD | 0.88 | 1.16 | 0.82 | n.s. |
| February | Average | 3.27 | 3.46 | 3.13 | F(2,107)=0.87 |
| | SD | 0.96 | 0.99 | 1.08 | n.s. |
| Full year | Average | 3.30 | 3.19 | 3.26 | F(2,107)=0.32 |
| | SD | 0.61 | 0.75 | 0.70 | n.s. |

Table 8: The differences between final career and job self-efficacy

| Self-efficacy for professional competence | | Students with a related field of employment (n=49) | Students with an unrelated field of employment (n=37) | Students who entered higher level of education (n=24) | ANOVA |
|---|---|---|---|---|---|
| May | Average | 3.13 | 2.88 | 2.93 | F(2,107)=1.22 |
| | SD | 0.7 | 0.82 | 0.88 | n.s. |
| July | Average | 3.46 | 2.99 | 2.82 | F(2,107)=4.29* |
| | SD | 0.85 | 1.16 | 0.91 | SRFE>SUFE>SEHE> |
| October | Average | 3.42 | 3.07 | 2.91 | F(2,107)=2.60 |
| | SD | 0.95 | 1.18 | 0.72 | n.s. |
| February | Average | 3.33 | 3.22 | 2.78 | F(2,107)=2.51 |
| | SD | 0.88 | 1.11 | 1.02 | n.s. |
| Full year | Average | 3.33 | 3.04 | 2.86 | F(2,107)=4.97** |
| | SD | 0.63 | 0.71 | 0.56 | n.s. |

Note: *p<0.05: **p<0.01

The results obtained by multiple comparison using the least significant difference (LSD) method, differences were observed in the averages, i.e., students with a related field of employment > students with an unrelated field of employment > students who entered higher level schools. Moreover, the main effect was significant in the items related to the self-efficacy for professional competence over the full year ($F(2,107) = 4.97$, $p < 0.01$). In the results obtained by multiple comparison using the LSD method, differences were observed in the averages, i.e., students with a related field of employment > students with an unrelated field of employment > students who entered higher level schools. These results suggest that when a student determined his/her career, being confident in his/her acquired specialty field played an important role in the selection of a job related to his/her specialized field.

**Effects of the Career Guidance Activities on Job Self-Efficacy**

The effects of the career guidance activities on the students' job self-efficacy before students had determined a career was investigated using multiple regression analysis. Consequently, significant multiple correlation coefficients of $R = 0.47$ were obtained for both factors (self-efficacy for adaptive competence and self-efficacy for professional competence) (see Table 9). The standard partial regression coefficient revealed that "mock interviews" and "exchange meetings with graduates" significantly affected self-efficacy for adaptive competence. The standard partial regression coefficient also revealed that "exchange meetings with graduates" significantly affected self-efficacy for professional competence.

The results show that the activities of "mock interviews" and "exchange meetings with graduates" were important in the development of job self-efficacy in the students. These activities commonly contained interpersonal communication through interaction. In other words, for the development of students' job self-efficacy, the evidence suggests that experiences acquired from relationships with others are more effective than objectification of abilities such as "mock tests for career" and "lectures on SPI".

Table 9: Effects of the career guidance activities on job self-efficacy

| Standard partial regression coefficient | Self-efficacy for adaptive competence | Self-efficacy for professional competence |
|---|---|---|
| Research of career | -0.02 | -0.16 |
| Distribution of career guidance manual | -0.17 | -0.06 |
| Mock interviews | 0.44** | 0.20 |
| Exchange meetings with graduates | 0.24* | 0.31** |
| Mock tests for career | -0.03 | 0.17 |
| Multiple correlation coefficient | R=0.47 | R=0.47 |
| ANOVA | F(5,110)=6.33** | F(5,110)=5.06** |

Note: p<0.05*:p<0.01**
SRFE: Students with a related field of employment
SUFE: Students with an unrelated field of employment
SEHE: Students who entered higher level education

## CONCLUSION

In this article, the effects of career guidance performed on the 12th graders at one technical high school on their job self-efficacy were analyzed. The results obtained in this research can be summarized as follows:

(1) Self-efficacy varied within a narrow range, and no extreme changes were observed in the 12th graders.
(2) Feelings about career exhibited a V-shaped curve, the bottom of which was observed in October when actual careers were determined.
(3) Students with high self-efficacy in their specialized fields tended to select jobs related to their specialized fields.

(4) Of the career guidance activities performed over the full year, activities related to interpersonal communication, such as mock interviews and exchange meetings with graduates were important in the development of students' job self-efficacy.

These results might be useful as basic knowledge for systematizing career guidance in technical high schools although the sample of this investigation was limited. In particular, in addition to the transmission of knowledge and guidance provided to students to find jobs, supplying students with opportunities to learn through communication with teachers and senior students is important in career guidance for students in the 12th grade. In the future, researchers should attempt to examine how to improve career guidance for students in the 12th grade by working cooperatively with teachers in charge of career guidance and for each course. The goal will be to determine a clear direction for career guidance for making a substantial contribution to the national policy.

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