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Correlation between Learning Motivation and Realization among Working Students, and the Factors - Examination Using a Hypothesis Verification Approach -

Morihiko Ikemizu [*], Takaaki Hosoda [*],
Yuya Yokoyama [*], Tokuro Matsuo [*]

Abstract

This study examined the relationship between the learning motivation of working students and the achievement of learning outcomes through hypothesis-testing correlation analysis. While previous studies by Ikemizu et al. (2025) were limited to identifying average trends, this study focused on the relationship between individual motivation and outcomes. Using data from an Intage survey, hypotheses were set and tested regarding knowledge acquisition, qualification attainment, and the formation of human networks. The results showed that broad knowledge acquisition was achieved as expected, while time constraints had an impact on degree and qualification attainment. These findings provide insights into strategies for supporting continuous learning in adult education.

Keywords: working student, continuing education, motivation and realization of learning, learning time

1 Introduction

In Japan, it is becoming a social necessity for working adults to return to university or graduate school to continue their education. This trend is driven by rapid changes in social structures, such as globalization, technological innovation, and an aging population. The career experience accumulated as a working adult is no longer sufficient to adapt to these structural changes. Therefore, it has become essential to continuously acquire new knowledge and skills. By acquiring these new knowledge and skills, working adults can maintain their competitiveness throughout their professional lives and even pursue career advancement or career transitions. For example, efforts to enhance labor productivity by mastering new technologies such as generative AI are gaining momentum. As a result, society can meet the demand for older workers to work alongside younger generations. However, Japan's participation rate in high-quality adult education and training programs is the lowest among OECD member countries [1]. While there is an understanding of the need for lifelong learning, the low participation rate in such programs remains a significant challenge. Therefore, understanding the motivation for learning among working adults and the factors that hinder it is of utmost importance.

Working adults have diverse motivations for continuing education. For example, they may seek to acquire new specialized knowledge or obtain qualifications in order to advance their careers or change careers. Additionally, working adults may pursue academic interests for self-

[*] Advanced Institute for Industrial Technology, Tokyo, Japan

fulfillment [2]. However, continuing education among working adults in Japan has not yet become as widespread as in other countries. According to a survey by the Ministry of Education, Culture, Sports, Science and Technology (MEXT), the main obstacles to continuing education include “high costs,” “long working hours that leave little time for study,” and “lack of understanding from the workplace” [3]. In particular, middle-aged working adults aged 30 and over face increasing responsibilities at work and at home, making it difficult to secure the time needed for learning. For example, some working adults report that they are too busy with work and have no time for anything other than commuting between home and the office. Such time constraints have been reported as barriers to participation in learning. In addition, uncertainty about the outcomes of learning is a concern for working adults. Positive experiences include gaining confidence in one's abilities and realizing that there is still room for improvement. On the other hand, uncertainty about how qualifications and other outcomes will be reflected in one's career can be a barrier to continuing learning [4]. According to a survey report by the Cabinet Office, 6% of companies have a policy of significantly reflecting continuing education in employee treatment, 53% have a policy of reflecting it to some extent, and about 60% of companies take some form of consideration. On the other hand, about 40% of companies responded that they would not change employee treatment even if continuing education were implemented [5].

Working students pursue continuing education because of their strong desire for self-improvement and career autonomy. With the growing popularity of continuing education, working students tend to choose continuing education not only to improve their skills but also as a means of actively managing their career development [5]. Continuing education is an important motivator for working students, as it enhances their self-esteem and enables them to improve their position in the workplace and gain new career opportunities [6]. In addition, the spread of educational methods that meet the diverse needs of learners, such as online education and blended learning, is also a factor promoting continuing education among working students [6].

The purpose of this study is to evaluate the learning motivations of working students prior to enrollment and whether they were able to achieve those motivations after graduation, and to identify the factors that contributed to the differences. Through this, we aim to understand what motivates working students to choose continuing education and how the results of continuing education lead to factors that promote further learning. The data on the learning motivation and learning outcomes of working students covered in this study are taken from the same survey data [7] used in previous studies by Ikemizu et al. Ikemizu et al. clarified the trends in the motivation and outcomes of continuing education among working students mainly through comparisons of average values [7]. Based on this, this study focuses on the correlation between motivation and achievement and attempts further analysis using a hypotheses verification approach.

2 Related Previous Studies

This chapter presents previous studies on working students' motivation to learn and continuing education. First, we examine how career development, self-actualization, and market value influence working students' decision to pursue continuing education. Next, based on existing studies, we describe the support systems needed in the workplace and at home to enable students to continue their education. Based on these previous studies, we present a theoretical framework for deepening our understanding of working students' motivation to learn and continuing education.

2.1 Motivation for Learning

Research on the motivation of working students focuses on three main motivations: career development, self-fulfillment, and improving market value. Miyoshi shows that working students are strongly motivated to acquire a wide range of knowledge and expertise when enrolling in professional graduate schools [8]. This indicates that working students strongly feel the need to acquire a wide range of knowledge, expertise, and skills in order to advance their careers to a higher level. In addition, continuing education is often an important step for working students who wish to change careers in order to succeed in a new field.

Tsukahara et al. indicate that working students pursue continuing education in order to acquire a wide range of knowledge [9]. In particular, acquiring specialized knowledge and a broad perspective at university enables working students to take on new challenges. Another motivation for working students is to enhance their job security and market value by acquiring the latest skills and knowledge. It is therefore necessary for companies and society to recognize the value of working students' learning in order to strengthen their motivation to learn [5]. These motivations are also linked to the perspective of contributing to the construction of a "knowledge-circulating society" by returning individual needs to society [10].

Self-improvement is a form of continuing education. Shinozaki et al. show that workers who are considering changing jobs or becoming independent are proactive in self-improvement and continuing education. They also state that "these workers have a strong sense of purpose in improving their skills with the aim of advancing their careers, and that this sense of purpose is a driving force for self-improvement" [11].

According to the self-determination theory proposed by Edward Deci and Richard Ryan, achieving one's own goals leads to a sense of competence, and the fulfillment of desires increases intrinsic motivation [12]. Therefore, learning for self-actualization can also be an important motivating factor. In particular, successful experiences at work and the results of learning can serve as a driving force for taking on new challenges with confidence.

2.2 Support for Continuing Education

The Ministry of Health, Labour and Welfare (MHLW) has presented guidelines for promoting learning and continuing education in the workplace in order to raise awareness of the importance of continuing education [13]. The following three items are listed in the "learning process" for promoting autonomous, proactive, and continuous learning and continuing education. "A. Clarify the abilities and skills necessary for work as much as possible and share learning goals with relevant parties." "B. Secure effective education and training programs and opportunities to acquire the abilities and skills necessary for work." "C. Develop support measures to encourage autonomous and proactive learning and continuing education among workers." The MHLW supports continuing education by presenting support measures for labor and management and public support measures.

As factors influencing continuous learning, Miyoshi emphasizes that working students' strong desire for growth and career development are what motivate them to continue learning [8]. Similarly, Shinozaki and Takahashi also show that learners' career awareness is a motivating factor for continuing learning [11].

Tsukahara's research points out the importance of learning support by companies, emphasizing that a system for evaluating learning outcomes is essential for working students to apply what they learn in the workplace and advance their careers [9]. Support for learning in the workplace includes securing time for learning, providing opportunities to apply what is learned directly to work, and positive evaluation of learning. This makes it easier for working students to balance their studies and work, enabling them to maintain their motivation to learn. In addition, providing an environment that makes it easier for working students to balance their studies and work, such as offering classes in the evenings or on weekends, has been cited as a means of contributing to the continuation of learning.

Shinozaki et al. reported on the support that people who undertook learning for career change felt would have been helpful during their learning. Approximately 30% of those who undertook learning felt they needed advice on what and how to learn [11]. This suggests that the presence of a mentor who can help them consider the direction of their learning is important.

Yokoyama et al. have shown that the human networks and connections with friends formed through university and graduate school studies have a significant impact on post-graduation careers and continuing education [14]. In particular, the results showed that continuing education is strongly associated with having like-minded friends. As with the results of Shinozaki et al., this demonstrates the importance of human connections in continuing education.

3 Setting Hypotheses

Section 2 presented previous studies on learning motivation and continuing education support. It showed that strong self-actualization motivation is important for continuing education support. However, the relationship between learning motivation and learning outcomes, which is linked to continuing education, remains unclear. For continuing education, it is necessary for motivation to be repeated. It is important to determine whether working students feel a sense of ability that leads to repeated motivation. Therefore, based on previous studies, this section sets forth hypotheses regarding the learning motivation and realization of working students. In particular, we focus on three factors: abilities and skills necessary for work, visible degrees and qualifications, and support from colleagues. Previous studies have mainly focused on understanding the average trends in the motivations and outcomes of working students pursuing continuing education [7]. In contrast, this study adopts a hypothesis-testing methodology centered on correlation analysis between motivation and achievement in order to examine the relationship between each individual's motivation and achievement in greater detail. This difference allows us to attempt to identify specific factors that influence the sense of achievement in continuing education.

Hypothesis 1: Working students are acquiring a wide range of knowledge and expertise as expected.

Miyoshi showed that working students are strongly motivated to acquire a wide range of knowledge and expertise when enrolling in professional graduate schools. It is necessary to show whether they have acquired the expected level of knowledge. This hypothesis is based on the assumption that universities and graduate schools are providing working adults with appropriate knowledge and expertise.

Hypothesis 2: Working students are provided with educational training programs and

opportunities as expected, and are acquiring degrees and qualifications.

Obtaining a desired degree or qualification is widely recognized as a way to increase one's market value in the labor market. Increased market value can lead to promotion to higher positions and higher salaries. This hypothesis is based on the assumption that obtaining the expected degree or qualification will motivate individuals to pursue higher degrees or qualifications.

Hypothesis 3: Working students are able to acquire companions to accompany them in their studies as expected.

When studying, it is common to encounter many unclear points and become confused. This is something that many people experience. The first step is to ask the instructor for clarification. Students who share the same goal of acquiring knowledge or qualifications often find solutions by consulting with their peers. This hypothesis is based on the premise that having peers who share the same goals promotes learning.

These hypotheses are based on suggestions from previous studies and can clarify the difference between learning motivation and post-completion realization. From these multifaceted perspectives, we can provide new insights that contribute to the motivation and continuous learning of working adults.

4 Analysis of Questionnaire

In this section, we analyze a questionnaire survey of working students who have studied at universities or graduate schools in order to verify the hypothesis presented in Section 3.

4.1 Survey summary

The questionnaire results used for the analysis is “Survey About Study De-sire and Study Achievements of Businesspersons,” which is provided by INTAGE Inc. A summary is shown in Table 1. This questionnaire is designed to compare the learning motivation of working students with their actual achievements after graduation.

Table 1: Outline of survey

Survey duration	2024 Mar. 14 - Mar. 18
Number of samples	679
Number of valid samples	320
Male : Female	202 : 118
Average age	Male : 48.7 Female : 45.7

There are 19 questions. The 19 questions are listed in the appendix. Among these questions, Q2 to Q4 are for prospective students, and Q8 to Q10 are for graduates. Answers are to be given using the five-level scale in Table 2 based on the choices provided.

Table 2: five-level scale

Level	Answer
5	Applicable
4	Partially applicable
3	No Preference
2	Minimally applicable
1	Not applicable

Q2 is labeled “mind,” Q3 is labeled “motivation,” and Q4 is labeled “opportunity.” Q8 is labeled “acquisition,” Q9 is labeled “realization,” and Q10 is labeled “bond.” Each major question consists of several sub-questions.

4.2 Analysis of Sub-questions about Motivation and Realization

Subquestions Q3 and Q9 are paired questions regarding motivation and realization. Analysis is conducted on a sub-question basis. Of the 320 valid responses, analysis was conducted on the 107 responses that answered all sub-questions in Q3 and Q9. Table 3 compares the sub-questions in Q3 and Q9. Table 3 also shows the median and mode, which are basic statistical measures for each sub-question.

Table 3: Sub-questions text and median and mode

Sub-question (Sq)	common text	
	Q3 unique text Level scale median, mode	Q9 unique text Level scale median, mode
Sq-1	the basic knowledge directly necessary for the current job	
	Q3-1: To acquire 4, 4	Q9-1: Acquired 4, 4
Sq-2	the latest expertise in my current job	
	Q3-2: To acquire 4, 4	Q9-2: Acquired 4, 4
Sq-3	at my current workplace.	
	Q3-3: To be promoted 3, 3	Q9-3: Got promoted 2, 1
Sq-4	the degree I had been aiming for	
	Q3-4: To get 3, 4	Q9-4: Achieved 3, 3
Sq-5	the highest level of education I had aimed for.	
	Q3-5: To improve 4, 4	Q9-5: Achieved 3, 3
Sq-6	the qualification I had been aiming for.	
	Q3-6: To obtain 4, 4	Q9-6: Obtained 3, 3
Sq-7	a wide range of insights and knowledge	
	Q3-7: To gain 4, 4	Q9-7: Gained 4, 4
Sq-8	my scattered knowledge into a coherent system.	
	Q3-8: To systematize 3, 3	Q9-8: Systematized 3, 4
Sq-9	a different job and increase my annual income.	
	Q3-9: To get 3, 3	Q9-9: Got 2, 1
Sq-10	for a new workplace or job that is different from your current one.	
	Q3-10: To prepare 3, 3	Q9-10: Prepared ready 3, 1

Sq-11	like-minded friends.	
	Q3-11: To fine 3, 3	Q9-11: Fined 3, 3
Sq-12	a network of people outside the company	
	Q3-12: To gain 3, 3	Q9-12: Obtained 3, 4

Figure 1 to 12 show respondents' motivations and evaluations of realization for Sq-1 to Sq-12. Motivations are plotted on the horizontal axis and realization on the vertical axis. The size of the circles indicates the number of responses.

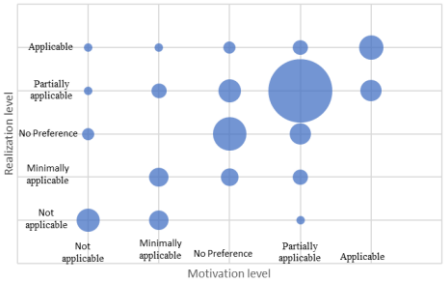

Figure 1: Sq-1

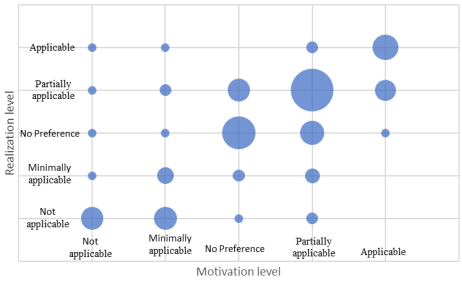

Figure 2: Sq-2

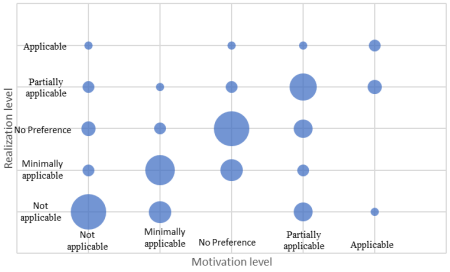

Figure 3: Sq-3

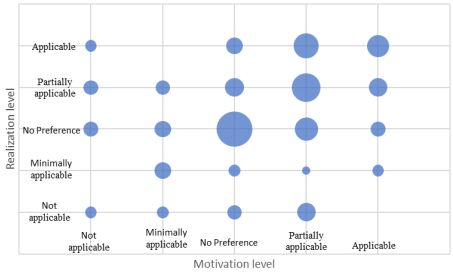

Figure 4: Sq-4

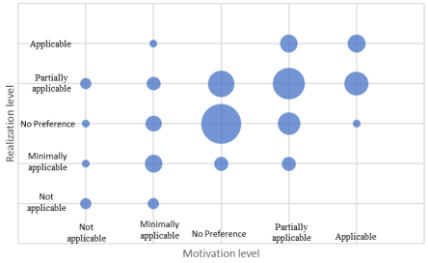

Figure 5: Sq-5

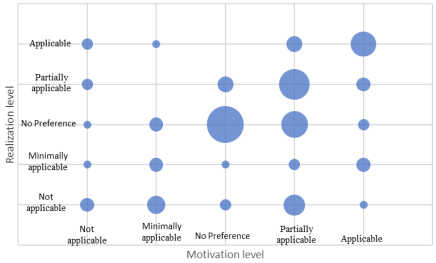

Figure 6: Sq-6

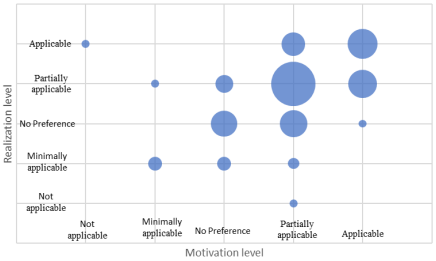

Figure 7: Sq-7

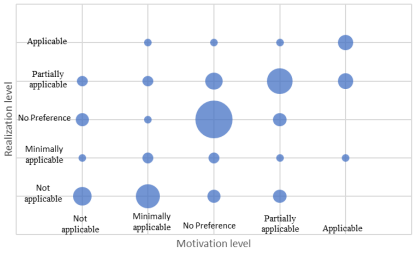

Figure 8: Sq-8

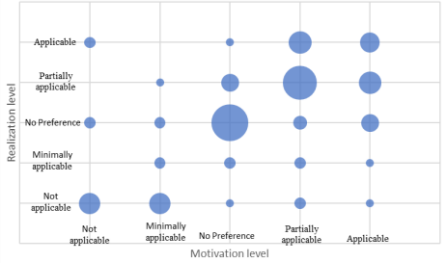

Figure 9: Sq-9

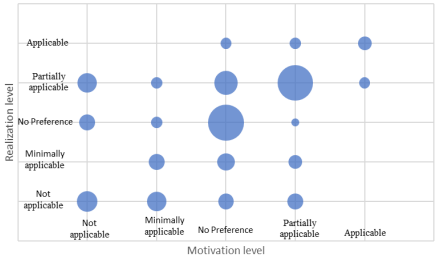

Figure 10: Sq-10

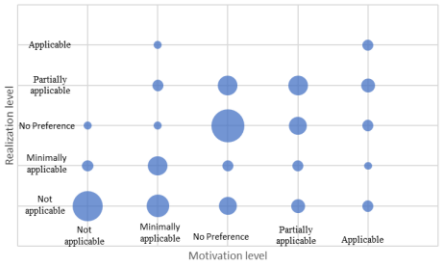

Figure 11: Sq-11

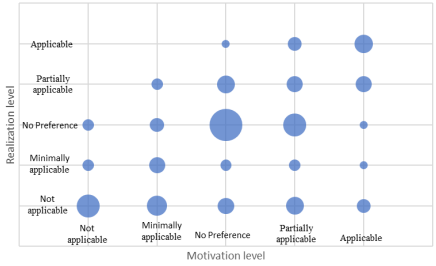

Figure 12: Sq-12

Table 4 shows the correlation coefficients between motivation and realization for each sub-question.

Table 4: correlation coefficients between motivation and realization

	correlation coefficient		correlation coefficient
Sq-1	rs = 0.80	Sq-7	rs = 0.67
Sq-2	rs = 0.78	Sq-8	rs = 0.77
Sq-3	rs = 0.73	Sq-9	rs = 0.69
Sq-4	rs = 0.50	Sq-10	rs = 0.69
Sq-5	rs = 0.71	Sq-11	rs = 0.63
Sq-6	rs = 0.54	Sq-12	rs = 0.60

From the analysis results in Table 3 and Figs. 1 to 12, it can be seen that there is no bias in the data, and therefore, hypotheses 1, 2, and 3 can be verified.

In Sq-1 and Sq-2, the correlation coefficients in Table 4 indicate a very strong correlation between motivation and realization. Furthermore, Fig. 1 and Fig. 2 show that the levels of motivation and realization are high. On the other hand, in Sq-4 and Sq-6, Table 4 indicates that the correlation between motivation and realization is moderate. Furthermore, in Sq-6, as shown in Fig. 6, it was found that the level of realization was lower than the level of motivation. Sq-3, Sq-5, Sq-7, Sq-8, Sq-9, and Sq-10 showed strong correlations with each other, as indicated by Fig. 3, 5, 7, 8, 9, and 10, respectively, and Table 4. Sq-7 showed a strong correlation between motivation and realization, as indicated by Fig. 7. Sq-7 showed a strong correlation between high levels of motivation and realization. Sq-3, Sq-9, and Sq-10 indicated that many respondents had lower levels of realization than motivation, as shown in Fig. 3, Fig. 9, and Fig. 10. In Sq-12, some respondents had a higher level of realization than motivation.

5 Discussion

In this section, we will examine the hypothesis based on the analysis results in Section 4 and clarify the factors involved.

Hypothesis 1: Working students are acquiring a wide range of knowledge and expertise as expected.

The knowledge-related questions are Sq-1, Sq-2, Sq-7, and Sq-8. Sq-1 and Sq-2 show very strong correlation coefficients, suggesting that the expected outcomes regarding motivation have been achieved as anticipated. On the other hand, Sq-7 and Sq-8 have a strong correlation, and many respondents in Sq-7 had high levels of both motivation and realization. Based on these results, we believe that Hypothesis 1 is valid. Universities and graduate schools publish their diploma policies and syllabi, and we believe that working students carefully examined these before enrolling. We also believe that universities and graduate schools provide educational content that meets the expectations of working students.

Hypothesis 2: Working students are provided with educational training programs and opportunities as expected, and are acquiring degrees and qualifications.

The sub-questions related to degrees and qualifications are Sq-4 and Sq-6. In these two sub-questions, motivation and achievement showed a moderate positive correlation. In Sq-1 and Sq-2, motivation and achievement were highly consistent, suggesting that the expected educational training programs and opportunities were provided. However, the expected degrees and qualifications were not obtained. Based on these results, it is difficult to conclude that Hypothesis 2 holds. In Japan, 21% of students enrolled in doctoral programs drop out before completing their studies, with the rate reaching 50% in the humanities and 38% in the social sciences [15]. One reason for not obtaining the expected degree may be that, in the case of doctoral degrees, it was more difficult than initially expected to secure sufficient time for research. In the case of working students, 40% are unable to secure sufficient time for research because they are working full-time while conducting research [16]. The pass rate for the 2024 bar exam at law schools, which are professional graduate schools aimed at obtaining qualifications, was 34.8% [17]. It is likely that many students are unable to obtain the qualifications they had hoped for.

Hypothesis 3: Working students are able to acquire companions to accompany them in their studies as expected.

The sub-questions related to gaining friends are Sq-11 and Sq-12. In these two questions, there was a strong positive correlation between motivation and realization. The mode to Sq-12 was 4, indicating that many working students gained more friends than they had expected. Based on these results, we believe that Hypothesis 3 is valid. On the other hand, Figures 11 and 12 show that some working students did not gain as many friends as they had expected. Further research is needed.

A survey by the Ministry of Education, Culture, Sports, Science and Technology showed that working students find it difficult to secure sufficient time for learning, as indicated in Section 1. The results of this section suggest that the difficulty of securing learning time has a visible impact on the acquisition of degrees and qualifications. Acquiring degrees and qualifications is important because achieving one's goals leads to a sense of competence and fulfillment, which in turn leads

to intrinsic motivation. To this end, it is necessary to secure learning time with the understanding of one's workplace and family. It is expected that the acquisition of degrees and qualifications, when reflected in compensation, will have a positive impact on the workplace and home environment. Educational institutions are encouraged to establish support systems for degree and qualification acquisition through long-term learning support.

Furthermore, as shown in Section 1, few companies have policies that significantly reflect continuing education in treatment, so we did not establish a hypothesis regarding continuing education and treatment in this study. On the other hand, Sq-3, Sq-9, and Sq-10 show a strong correlation between motivation and realization, but the most frequent realization level was 1, meaning that it did not apply. Many working students responded that their treatment had not improved. Both motivation and realization are at low levels. Since the fulfillment of desires leads to intrinsic motivation, it is expected that continuing education will improve the treatment of working students by companies.

6 Conclusion

The purpose of this paper was to evaluate the learning motivations of working students prior to enrollment and whether those motivations were realized after graduation, and to clarify the factors behind any differences. To this end, we tested three hypotheses using the results of a questionnaire survey of working students who had completed undergraduate or graduate programs. The results showed that working students were able to acquire the broad knowledge, insights, and expertise that they had expected to gain. This can be attributed to the fact that working students decided what they wanted to learn independently and studied at universities and graduate schools. In addition, while some graduates were able to make new friends as they had expected, the level of motivation to do so was low. On the other hand, we found that there was a relatively weak correlation between motivation to obtain a degree or qualification and actual achievement. A major factor is that working students who work full-time do not have enough time to conduct the research and study necessary to obtain higher degrees and qualifications. There has also been no improvement in the treatment of working students by companies after graduation. Satisfying the desires that lead to tangible results, such as obtaining a degree, qualification, or improved treatment, can be effective in promoting continuous learning by transforming motivation into intrinsic motivation.

In Japan, the mandatory retirement age for companies will be raised to 70 in 2024. In addition, the number of older adults who want to continue working is increasing. Workers of all generations, including older adults, will need the latest specialized knowledge. Therefore, the importance of continuing education is expected to increase in the future. Time constraints are a major issue for working students enrolled in full-time continuing education programs, so universities and graduate schools should prepare educational systems that make learning easier. In the future, we would like to conduct research on educational systems that make continuing education easier.

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APPENDIX [14]

No.	Question Contents	Answer Format
Q1	Please tell us your workplace/life environment when you came to think of studying at college or graduate school.	Two-option (Yes/No)
Q2	Please tell us your mind when you came to think of studying at college or graduate school.	Five-level
Q3	Please tell us what motivated you to study at college or graduate school.	Five-level
Q4	Please tell us what led you to study at college or graduate school.	Five-level
Q5	Please tell us your age when you started to study at college or graduate school after becoming working adults.	Descriptive form
Q6	Please tell us what type of college or graduate school you started to study after becoming working adults.	Multiple-choice
Q7	Please tell us what field of college or graduate school you started to study after becoming working adults.	Multiple-choice
Q8	Please tell us what you obtained and thought about learning at college or graduate school as a working adult student.	Five-level
Q9	Please tell us if what you thought you wanted to learn at college or graduate school could be realized.	Five-level
Q10	Q10Please tell us the relationships with college or graduate school after graduation from or taking classes at college or graduate school.	Five-level
Q11	Besides Q10, please fill in if there would be any relationship with your college or graduate school. <<Optional>>	Descriptive form
Q12	Would you feel any relationships(engagement) with college or graduate school after graduation or attending lectures?	Multiple-choice
Q13	Please choose your educational background before being working adult.	Multiple-choice
Q14	In working, there are several ways of thinking. After reading each subdivided question, please tell us how important itis when you work.	Five-level
Q15	We would like you to ask about study experiences after being working adult. Please tell use your college or graduate school.	Multiple-choice Descriptive form
Q16	Please tell us all the "national" college or graduate school you know for working adults.	Multiple-choice
Q17	Please tell us all the "public" college or graduate school you know for	Multiple-

	working adults.	choice
Q18	Please tell us all the "private/business" college or graduate school you know for working adults.	Multiple-choice
Q19	Q19Please tell us all the "private, information/design" college or graduate school you know for working adults.	Multiple-choice