

# RELATIONSHIP BETWEEN GOAL ORIENTATION, CONCEPTION OF LEARNING AND LEARNING BEHAVIOR

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## ABSTRACT

This study examined the causal relationship of goal orientation and conception of learning on learning behavior; previously, these concepts were examined separately in preceding studies. A sample of 185 fourth-grade university students participated in the study. A covariance structure analysis revealed that the causal effect regarding goal orientation to learning behavior through conception of learning, in which the mediational role of conception of learning was confirmed. Learning goals had a positive effect on autonomous learning conception and had a negative effect on forced learning conception. While performance-avoidance goals had a negative effect on autonomous learning conception, it had a positive effect on forced learning conception. In addition, autonomous learning conception had a positive effect and forced learning conception had a negative effect on learning behavior.

## KEYWORDS

Goal Orientation, Conception of Learning, Learning Behavior

## 1. INTRODUCTION

Goal orientation and conception of learning are decisive factors that regulate learning behavior such as motivation for learning and/or learning approach.

### 1.1 Goal Orientation

According to goal achievement theory (Dweck 1986), which explains the differences in learning behavior based on a student's goals when executing tasks, a student's goals may be classified into two categories: learning goals and performance goals. The purpose of the former is to acquire new knowledge and skills through challenging activities while that of the latter is to seek positive and avoid negative evaluations. Students who are oriented toward learning goals tend to select challenging tasks and persevere even when they encounter failure, regardless of whether or not they are confident in their abilities. Performance goal-oriented students behave similarly to students with learning goal orientation provided they are confident in their abilities; however, if they lack confidence in their abilities, they are less likely to persevere until they have completed the tasks. Elliot and Dweck's (1988) findings support the latter statement. According to Ames and Archer (1987, 1988), learning goals have a positive effect on both academic achievement and endogenous motivation. Furthermore, emphasis has been placed on the superiority of learning goals.

Elliot and Harackiewicz (1996) divided a performance goal into a performance-approach goal in which a student tries to outperform others and a performance-avoidance goal, which is the desire to avoid performing more poorly than others do. Elliot and colleagues found that performance-approach goals result in positive effects on endogenous motivation and academic performance whereas performance-avoidance goals have negative effects on them, thus, demonstrating the importance of distinguishing between approach and avoidance utilities (e.g., Elliot & Church, 1997; Rawsthorne & Elliot, 1999).

Previous research has shown that learning behaviors are associated with a student's goal orientation (Bandura, 2012) in which learning goals and performance-approach goals have positive influences whereas performance-avoidance goals have negative effects on learning behavior (Liem et al., 2008).

## 1.2 Conception of Learning

Research on students' conceptions of learning can be traced to the late 1970s and early 1980s, primarily in Europe (e.g., Säljö, 1979; Van Rossum & Schenk, 1984). Marton et al. (1993) found qualitatively different conceptions of learning among students of the British Open University in which learning was recognized as an increase in knowledge, memorizing and reproducing, applying, understanding, seeing something in a different way or as and changing as a person.

Previous studies have revealed that there are differences in learning behavior, which are dependent on how people conceptualize learning. Van Rossum and Schenk (1984) conducted an empirical study on learning behavior in relation to reading materials. Students who perceived learning as memorizing adopted superficial learning behavior in which they only read a summary whereas students who perceived learning as the abstraction of meaning or an interpretative process aimed at the understanding of reality adopted deep learning behavior in which they read the sentences while processing the relationship between the paragraphs. Dart et al. (2000) suggested that students who had qualitative conceptions such as personal fulfillment and experiential conceptions like a process not bound by time were more likely to utilize deep approaches to learning in contrast to students who had quantitative conceptions such as an increase of knowledge who were more likely to rely on superficial approaches.

Takayama(2000), who constructed a scale of conception of learning of Japanese students consisting of nine categories that included lifelong learning, and compulsion/duty, found that subjective exploration, growth/improvement and learning/repetition(effort) have positive influences on deep learning behavior including checking one's own understanding or making associations of uncommon knowledge. On the contrary, obligation/compulsion has negative influences on it (Takayama, 2002).

As noted previously, goal orientation and conception of learning have been viewed as regulating factors that affect learning behavior. Goal orientation involves a student's belief about their goals and what they have learned. Conception of learning is a student's belief on how to view the process of learning. Both concepts are thought to be personal characteristics formed through experiences and are closely related. There are two possibilities: (1) goal orientation may be a predictor of conception of learning that affects learning behavior; or (2) conception of learning may be a predictor of goal orientation that affects learning behavior. In this study, the relationship between goal orientation and conception of learning, and its effects on learning behavior were examined.

Coal orientation and conception of learning form the basis of students' learning behavior. To clarify these relationships is extremely important in considering the problems of education and learning at the place of educational practice.

## 1.3 Purpose

The first aim of this study was to examine three models of goal orientation and conception of learning on learning behavior (Fig. 1) and to compare their validities by using covariance structure analysis.

Model 1: Conception of learning mediation model

Model 2: Goal orientation mediation model

Model 3: Independent model

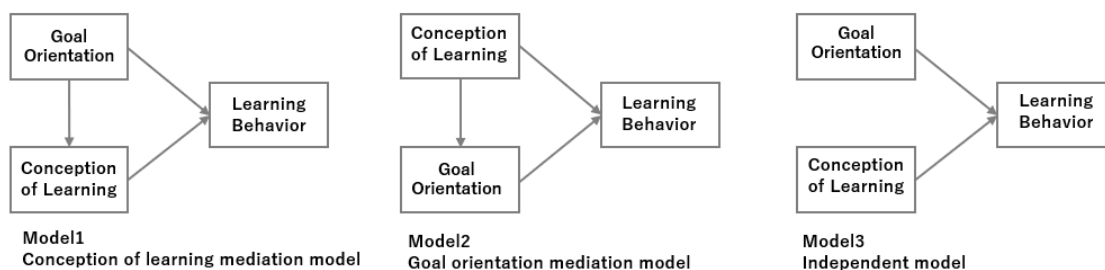


Figure 1. Three Models of Goal Orientation and Conception of Learning on Learning Behavior

The second aim of this study was to focus on the subordinate structures of goal orientation, conception of learning and learning behavior, and to clarify the causal relationship among the three.

Previous studies on goal orientation and conception of learning have mainly dealt with test scores of specific subjects and short-term learning behavior observed over a series of a few minutes. However, it is important to conduct research on learning tasks that are completed over a long-term process and that are based on a student's proactive attitude. Consequently, in the current study, graduation thesis research, as the learning task, that was conducted in a university was investigated.

## 2. METHOD

### Subjects

The participants included 185 fourth-grade university students from the School of Integrated Arts and Sciences of a Japanese public university.

### Procedures

The study was conducted in February 2018. The participants answered questionnaires during the presentation session of their graduation thesis.

### Measures

The participants were asked to indicate their agreement or disagreement for each item in the questionnaires on 5-point likert scale, ranging from do not agree at all to completely agree.

#### Goal Orientation

The questionnaire comprised 18 items, which was modified from Mitsunami (2010) translated from the Achievement Goal Scale developed by Elliot and Church (1997).

#### Conception of Learning

The questionnaire comprised 24 items. The items were partially modified from Takayama's (2002) scales.

#### Learning Behavior

The questionnaire consisted of 8 items. The items were partially modified from Mitsunami's (2010) scales. The items were modified to measure student's motivational beliefs and learning outcomes in the context of undertaking graduation work.

## 3. RESULTS AND DISCUSSION

The first objective of the study, Purpose 1, was to examine three causal models of goal orientation and conception of learning in relation to learning behavior. First, the variables of goal orientation, conception of learning, and learning behavior were clarified by performing factor analysis (3.1.). Subsequently, covariance structure analysis was conducted by using the variables clarified by the factor analysis. Furthermore, the suitability of the three models was compared (3.2.).

The second objective, Purpose 2, was to clarify the relationship between the subscales of goal orientation, conception of learning and learning behavior based on the results of the covariance structure analysis (3.3.).

### 3.1 Structure of the Scales

#### 3.1.1 Goal Orientation Scale

Factor analysis (principal factor with promax rotation) of goal orientation was performed. We found three factors with eigenvalues were 1 or more. The analysis was conducted again; items that were loaded at .40 or less as well as items that were loaded at .40 or more on two or more factors were excluded. The details of each item and the results of the analysis are presented in Table 1. The following three factors emerged: Performance-Avoidance Goal, Learning Goal and Performance-Approach Goal. An average value of the items was regarded as the respective value of each factor.

Table 1. Goal Orientation Items and Factor Loadings

Factors and Items	I	II	III	$h^2$
<b>Factor I . Performance Avoidance Goal(<math>\alpha=.87</math>)</b>				
I worry about the possibility of getting a bad grade.	<b>.83</b>	-.11	-.09	.61
I often think to myself, "What if I do badly?"	<b>.76</b>	-.07	.01	.56
My fear of performing poorly is often what motivates me.	<b>.74</b>	-.24	.14	.63
It is important for me to understand the content as thoroughly as possible.	<b>.67</b>	.33	-.12	.56
I just want to avoid doing poorly.	<b>.65</b>	-.06	.06	.44
My goal is to get better grades than most of the students.	<b>.60</b>	.07	.23	.58
I desire to completely master the material presented in classes.	<b>.50</b>	.15	.14	.40
<b>Factor II . Learning Goal(<math>\alpha=.75</math>)</b>				
I hope to have gained a broader and deeper knowledge when I am done with classes.	.07	<b>.80</b>	-.03	.65
I prefer course material that really challenges me so I can learn new things.	-.22	<b>.64</b>	.22	.49
I want to learn as much as possible from class.	.27	<b>.67</b>	-.17	.50
I prefer course material that arouses my curiosity, even if it is difficult to learn.	-.26	<b>.56</b>	.10	.35
<b>Factor III . Performance Approach Goal(<math>\alpha=.76</math>)</b>				
I am striving to demonstrate my ability in relation to others.	.07	-.09	<b>.76</b>	.58
I am motivated by the thought of outperforming my peers.	.03	.16	<b>.61</b>	.47
It is important to me to do better than the other students.	.10	.07	<b>.58</b>	.43
Contribution rate (%)	31.5	14.0	6.3	
Accumulated contribution rate (%)	31.5	45.5	51.8	

### 3.1.2 Conception of Learning Scale

Factor analysis (principal factor with promax rotation) of goal orientation was conducted. Four factors with eigenvalues were 1 or more were found. The analysis was conducted again; items that were loaded at .40 or less as well as items that were loaded at .40 or more on two or more factors were excluded. In Table 2 the details of each item and the results of analysis are presented. The following four factors emerged: Autonomous Development Duty and Memorizing, Growing Mind and Effort. An average value of the items was regarded as the respective value of each factor.

Table 2. Conception of Learning Items and Factor Loadings

Factors and Items	I	II	III	IV	$h^2$
<b>Factor I . Autonomous Development(<math>\alpha=.90</math>)</b>					
Learning is something we continue to do as long as we live.	<b>.91</b>	.11	.03	-.13	.70
Learning is something that will continue after becoming a member of a society.	<b>.82</b>	-.10	.01	-.06	.72
Learning is something that will continue throughout life.	<b>.81</b>	-.02	-.02	-.04	.63
Learning is trying to know what you are deeply interested in.	<b>.76</b>	-.05	-.07	.04	.60
Learning is actively exploring your interests.	<b>.69</b>	-.08	-.01	.07	.57
Learning involves learning what you truly want to do voluntarily.	<b>.53</b>	-.15	-.02	.11	.42
<b>Factor II . Duty and Memorizing(<math>\alpha=.84</math>)</b>					
Learning is being forced by parents or teachers.	.04	<b>.76</b>	-.10	-.03	.56
Learning is accurately memorizing the contents of materials.	-.10	<b>.75</b>	.16	-.11	.65
Learning is being forced to do things that you do not want to do.	-.10	<b>.73</b>	-.16	.02	.64
Learning is memorizing the textbook contents at a desk.	-.02	<b>.68</b>	.22	-.01	.53
Learning is being forced to do things that you do not want to do.	.03	<b>.68</b>	-.22	.06	.50
Learning is memorizing answers accurately for examinations.	.03	<b>.49</b>	.06	.14	.28
<b>Factor III . Growing Mind(<math>\alpha=.74</math>)</b>					
Learning involves human beings' forming a spiritual core.	.09	-.02	<b>.71</b>	-.03	.57
Learning means living a life like a human being.	.04	.09	<b>.70</b>	.03	.54
Learning is not accumulating knowledge, but forming a person's attitude.	-.11	-.10	<b>.65</b>	.01	.37
<b>Factor IV . Effort(<math>\alpha=.76</math>)</b>					
Learning is what you acquire with effort.	-.07	-.08	.08	<b>.91</b>	.80
It takes much time and effort to learn.	.10	.13	-.08	<b>.68</b>	.54
Contribution rate (%)	30.3	15.5	6.6	3.4	
Accumulated contribution rate (%)	30.3	45.8	52.5	55.9	

### 3.1.3 Learning Behavior Scale

Factor analysis (principal factor with promax rotation) of learning behavior was performed. It was determined that the first eigenvalue was sufficiently larger than the second eigenvalue and subsequently, that one factor solution was desirable. The analysis was conducted again; items were loaded at .40 or less were excluded. In Table 3, the details of each item and the results of analysis are shown. An average value of the 6 items was regarded as the learning behavior variable.

Table 3. Learning Behavior Items and Factor Loadings

A Factor and Items	I	$h^2$
<b>Factor I . Learning Behavior(<math>\alpha=.81</math>)</b>		
I tried to improve the quality of my graduation thesis as much as possible.	<b>.82</b>	.68
Even though it was difficult, I worked on it without giving up.	<b>.71</b>	.50
I studied what I did not know, or I asked my teacher and my friends about it.	<b>.69</b>	.47
I set goals and plans.	<b>.60</b>	.37
I often tried to read and understand the contents.	<b>.59</b>	.35
I was prepared to be able to respond to any questions in the presentation.	<b>.49</b>	.24
Contribution rate (%)	43.5	

## 3.2 Structural Equation Modeling

Using structural equation modeling (path analysis), we assessed how well the three models fit the data.

In Model 1, goal orientation affects learning behavior directly or through the conception of learning. First, it was hypothesized that the three variables of goal orientation would predict the relation of the four variables of conception of learning. Second, it was hypothesized that the three variables of goal orientation and four variables of conception of learning would predict the learning behavior variable based on the research results of Liem et al.(2008) and Takayama(2002). Subsequently, covariances were added between the variables of goal orientation and error variables of learning conception based on the correlation coefficient analysis results. The paths which were not significant, that is, less than the 10% level, were deleted and the analysis was conducted again.

In Model 2, conception of learning affects learning behavior directly or through goal orientation. The same procedure carried out for Model 1 was conducted.

In Model 3, goal orientation and conception of learning regulate learning behavior independently. It was hypothesized that the three variables of goal orientation and four variables of conception of learning would be related to learning behavior based on the research results of Liem et al.(2008) and Takayama(2002). Based on the results of the correlation analysis, covariances were added between the variables of goal orientation and learning conception. The paths, which were not significant, that is, less than the 10% level were deleted and the analysis was conducted again.

In Table 4, the results of evaluating the models are shown. The model fit was evaluated by the following indices: the goodness of fit index (GFI), the adjusted goodness of fit index (AGFI), the comparative fit index (CFI), and the root mean square error of approximation (RMSEA). Values above .95 for GFI, AGFI and CFI, and below .07 for RMSEA were regarded as a sufficient fit (Hooper at all, 2008). The result revealed that Model 1 accommodates the data very well. This result showed that students' conceptions of learning partially mediated the relationship between learning orientation and learning behavior

Table 4. Results of evaluating the models

Model	GFI	AGFI	CFI	RMSEA
1	.988	.956	1.00	.000
2	.941	.847	.915	.109
3	.984	.918	.963	.089

### 3.3 Path Analysis for Causality

We examined the effects of goal orientation and conception of learning on learning behavior with Model 1, which was the most suitable of the three models. The covariance structure analysis result of Model 1 is depicted in Figure 2. The numerical values of the unidirectional arrows are the standardized path coefficients and the numerical value of the bidirectional arrows are the correlation coefficients.

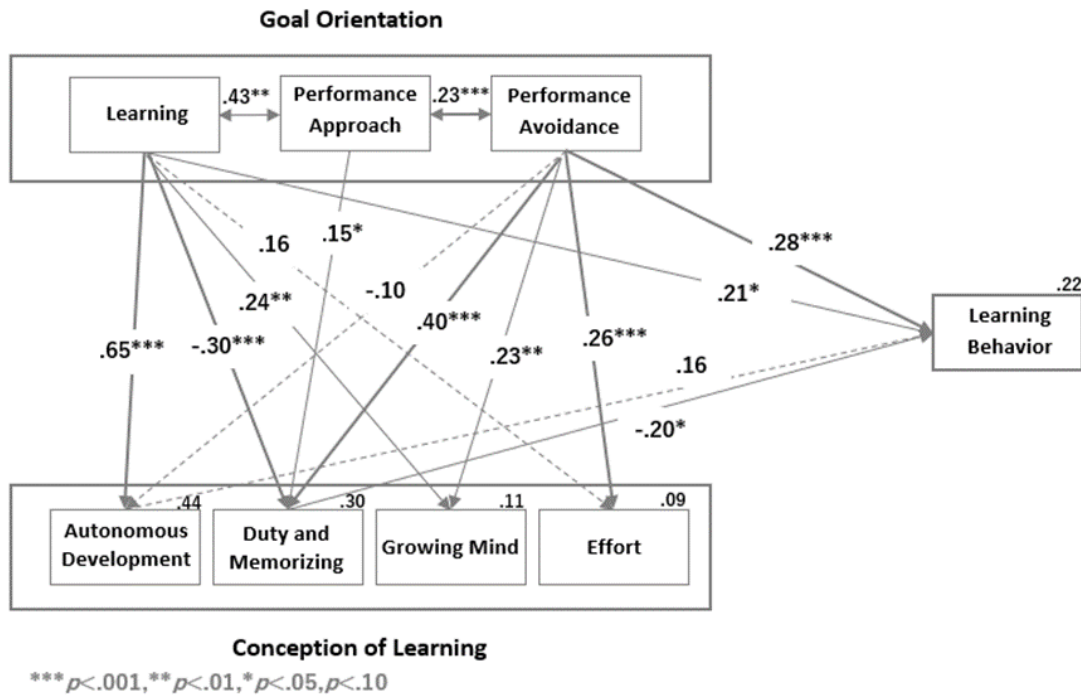


Figure 2. The Covariance Structure Result of Model 1

Learning Goal( $\beta=.21$ ) and Performance-Avoidance Goal( $\beta=.28$ ) had direct positive effects on Learning Behavior. In many previous studies (e.g. Liem et al., 2008), performance-avoidance goals have been considered to have a negative effect on learning behavior; however, a positive effect was confirmed in this study. The learning behavior component in the graduation thesis study determines whether or not students will be able to graduate. This constraint may result in students' attitudes such as "I do not want to get bad grades," thus, resulting in a positive effect and promoting positive learning behavior.

Learning Goal had a positive effect ( $\beta=.65$ ) on Autonomous Development, and a negative effect ( $\beta=-.30$ ) on Duty and Memorizing. On the contrary, Performance-Avoidance Goal had a negative effect ( $\beta=-.10$ ) on Autonomous Development and a positive effect ( $\beta=.40$ ) on Duty and Memorizing. Consequently, while goal-oriented students tended to regard learning as autonomous, but not mandatory activities, performance-avoidance goal-oriented students were more likely to regard learning as mandatory, but not autonomous activities.

In addition, Autonomous Development had a positive effect ( $\beta=.16$ ) on Learning Behavior while Duty and Memorizing had a negative effect ( $\beta=-.20$ ) on Learning Behavior. Our findings provide support to Takayam's(2002) study. It indicates that if students regard learning as autonomous, their active learning behaviors may be promoted whereas if they regard learning as mandatory, their active learning behaviors may be suppressed.

In summary, both learning and performance-avoidance goals have direct positive effects on learning behavior; however, although the former has an indirect positive effect, the latter has an indirect negative effect on learning behavior through Autonomous Development and Duty and Memorizing, respectively.

#### 4. CONCLUSION AND LIMITATION

In this study, we examined the causal relationship of goal orientation and conception of learning on learning behavior; previously, these concepts were examined separately in preceding studies. The results of the covariance structure analysis revealed that the causal effect in the model regarding goal orientation to learning behavior through conception of learning, in which the mediational role of conception of learning was confirmed.

Learning goals had a positive effect on autonomous learning conception and had a negative effect on forced learning conception. While performance-avoidance goals had a negative effect on autonomous learning conception, it had a positive effect on forced learning conception. In addition, autonomous learning conception had a positive effect and forced learning conception had a negative effect on learning behavior. The relation of paths connecting goal orientation and learning behavior through the conception of learning reveals that the learning goal has a positive effect, but the performance-avoidance goal has a negative effect on the learning behavior indirectly through Autonomous Development and Duty and Memorizing, respectively.

In this study, we examined graduation thesis research that was conducted in a university as a learning task. Depending on the nature of learning tasks to be examined, it is possible that a different result may be reached. Furthermore, it is recommended that other learning tasks be examined. In addition, although self-evaluation by students was treated as a measure of learning behavior, in order to guarantee objectivity, it is recommended that adding a more objective viewpoint such as evaluation by teachers be included.

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