

A Study on the Effects of Multiple Goal Orientation on Learning Motivation and Learning Behaviors

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In such an era when the value is constantly restructured and information is rapidly changed, education reform should cater for new challenges. The role and function of teachers is encountering a new change. Coping with current information generation, people with high self-efficacy of selecting and mastering large amount of information and higher self-regulation ability are required for the instant change of knowledge and learning strategies. By distributing and collecting questionnaires on sites, students in the universities in Taiwan and Mainland China are sampled. Total 500 copies of questionnaires are distributed, and 378 valid copies are retrieved, with the retrieval rate 76%. The research results show 1.the effect of multiple goal orientation on learning motivation, 2.the effect of multiple goal orientation on learning behaviors, and 3.the remarkably positive effect of learning motivation on learning behaviors. The research outcomes are expected to be applied to the professional development and enhancement for teaching and training, promote the quality of education or training, and be the reference for education related sectors and research on organizational behaviors.

Keywords: multiple goal orientation, learning motivation, learning behaviors, learning habits, learning attitudes, learning methods

INTRODUCTION

The development of global education in past years presents plural, innovative, and open new atmosphere, mainly because of changeable technologies and rapid boom of knowledge.

The transforming education reform is expected to have learners really experience the fun of learning and allow every learner become a happy lifelong learner. The wave of education reform has not been stopped in the past decade, the promotion of educational policies in Taiwan and China seems to be inspected, but it also reflects the citizens' discussion on major education issues and the active participation in decision-making and understanding. The body of teachers, parent

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representatives, or social organizations, and even student societies actively express the critical opinions or propose various measures. Education is a permanent business, and “actually presenting problems” is the first step to “really solve problems”.

Accordingly, the first-line teachers should present basic attitudes and competency to cope with the changing era, continuously face the organization restructuring of schools as well as plural and innovative teaching, constantly deconstruct and construct curricula, and enhance teacher effectiveness to promote school effectiveness so as to reinforce the function of education.

Research on motivation has recently become a major issue, i.e. goal orientation. When learning motivation is discussed, the theory stresses on the reason and purpose of learners engaging in learning, rather than recognizes student motivation. Since it is not the problem of “with” or “without” learning motivation, but the difference in orientation, goal orientation intends to discuss the learning processes of learners with distinct goal orientation. Learners’ motivation belief, emotion, cognitive strategies, and learning performance would change with the goal orientation. Apparently, learners’ use and selection of cognitive strategies, learning motivation, emotion, behavior reaction in learning processes, and learning performance are the key elements in self-regulating learning processes. As a consequence, the effects of multiple goal orientation on students’ learning motivation and learning behaviors are discussed in this study, expecting to apply the results to the professional development and enhancement of teaching or training, promote the quality of education and training, and offer reference for education related sectors and research on organizational behaviors.

LITERATURE REVIEW

Multiple goal orientation

The so-called goal orientation, as the standard of a learner evaluating the learning ability and achievement, refers to the purpose and reason of a learner engaging in learning (Allcott, 2011). For this reason, when being used for discussing learning motivation, goal orientation does not recognize a student with/without motivation, as the problem of learning motivation is not “with” or “without”, but orientation. According to Borgstede et al. (2013), three facts are discovered for current goal theory from empirical research. 1. Learners with mastery goal and performance-approach goal present good learning performance, while the ones with mastery goal might reveal more interests and positive emotion on learning. 2. Learners with avoidance performance goal would avoid learning in order not to be regarded as dull or incapable. In this case, such learners present not only worse learning performance, but also lower motivation and emotion, and seldom use cognitive strategies and metacognitive strategies. Eventually, learners might engage

State of the literature

- The role and function of teachers is encountering a new change. Coping with current information generation, people with high self-efficacy of selecting and mastering large amount of information and higher self-regulation ability are required for the instant change of knowledge and learning strategies.
- Stresses on the reason and purpose of learners engaging in learning, rather than recognizes student motivation.
- Since it is not the problem of “with” or “without” learning motivation, but the difference in orientation, goal orientation intends to discuss the learning processes of learners with distinct goal orientation

Contribution of this paper to the literature

- Expecting to apply the results to the professional development and enhancement of teaching or training, promote the quality of education and training, and offer reference for education related sectors and research on organizational behaviors.
- The following suggestions are proposed in this study. 1. Feedback for learner learning opinions 2. Application of plural methods 3. Construction of mastery-centered learning atmosphere.

in learning with more than two goal orientations. For example, a student might expect to learn new knowledge in class (mastery goal) as well as acquire high accomplishment in the course (performance-approach goal). Broms (2011) explained that such multiple goal orientation with more than two goals could be observed from the correlation coefficient among a learner's goal orientations. The research results show that it is possible for a learner engaging in learning with more than two goal orientations. Low correlations among goal orientations reveal that a learner's goal orientation is not bipolar, as claimed in goal theory, but orthogonal. As a matter of fact, a lot of researchers discovered that a learner could engage in learning with more than two goal orientations (Bonino et al., 2012), i.e. the viewpoint of multiple goal.

According to revised goal theory, approach/avoidance theory, and empirical research, the low correlation among the three goal orientations supports multiple goal orientation proposed by several researchers in past years. Low correlations among different goal orientations show goal orientation approaching orthogonal, i.e. the multiple goal orientation of a learner engaging in learning with two or more goals. Having comprehended relevant literatures and positive research, cross classification is proceeded by referring to Borgstede et al. (2013). Based on theories, learners are divided into four groups of mastery approach, mastery avoidance, performance approach, and performance avoidance to discuss the effects of learners' goal orientation on the learning motivation and learning behaviors.

Learning motivation

From relevant literatures, Bjornstad (2012) found out the close relationship among self-efficacy, work value, and self-regulation learning. Such motivation belief could help enhance and maintain self-regulation learning. In fact, the expectancy-value model for achievement motivation has guided lots of studies on motivation. According to the value-expectancy model proposed by Bortoleto et al. (2012), ability belief, success expectancy, and work value are the key learning motivation variables in a learner's self-regulation learning process. Ability belief refers to perceived current ability of a learner engaging in learning. Success expectancy refers to a learner's expectancy to success in learning; such expectancy is efficacy expectation, rather than outcome expectancies, i.e. a learner's perception of learning performance and selection, instead of expected outcomes. Work value contains important achievement value to well complete tasks, intrinsic value to enjoy the harvest from doing something, practical value of a task conforming to personal future plan, cost of being limited to approach another activity when devoting to an activity, and interests in learning. Learning motivation is a mediator between stimuli and responses. In other words, learning motivation is personal opinions of a learner to affairs, and the learner would pursue different knowledge because of distinct opinions. Broms (2011) mentioned that learning behaviors were expected to be rewarded that learning was purposive; but it might be changed from extrinsic to intrinsic motivation. Learners with intrinsic motivation could independently decide the desired things, without incentive, and acquire fun and sense of achievement in the process. Extrinsic motivation is the learning motivation induced by others' sanction and affected by the agreement with certain value of action. Although intrinsic motivation is comparatively spontaneous, persistent, and high-value, environmental factors are essential for influencing motivation that incentive and extrinsic support are essential (Broms, 2011).

According to the research of Broms et al. (2010), learners' learning motivation is divided into intrinsic learning motivation orientation and extrinsic learning motivation orientation in this study, as explained below.

1. Internal orientation covers favor to challenging lessons, regarding learning

as interests and hobbies, considering learning being able to expand vision, actively learning new lessons, and learning as to develop self-potential and realizing ideals.

2. External orientation contains learning for being affirmed, acquiring better accomplishment, passing tests or evaluations, showing off to others, competing with classmates, acquiring praise and attention from elders or the opposite sex, avoiding punishment and scorn, avoiding the shame of failure, and entering ideal schools.

Learning behaviors

Bonino et al. (2012) indicated that a learner would observe personal behaviors with various methods and control and modulate the learning behaviors with such self-observation. Learning Behaviors refer to various manifest behaviors of an individual participating in learning and mental activities or mental processes which could be indirectly known (Botetzagias et al., 2014). Briefly speaking, behaviors related to learning are regarded as learning behaviors, such as learning methods, learning attitudes, learning habits, and learning difficulty (Brouwer et al., 2014). Learning behaviors include the compound concepts of behavior and emotion which appear positive emotion, such as passion, optimism, curiosity, and interests, and present support to learning activities when a student invests in learning. On the contrary, Learning Disaffection appears on a student not investing in learning, being passive, not working hard, and giving up easily when facing difficulties, and possibly presenting discouragement, anxiety, and even cowering in the learning environment (Cor et al., 2014). According to Dierdorff et al. (2010), self-handicapping indicates that a learner intends to reveal personal ability and value in the learning. For instance, some learners would purposely not work hard at school, but study at the last moment, and use other self-handicapping strategies so that such situations could be regarded as bad learning, rather than the incapability when the performance is unfavorable. Lu (2011) divided help-seeking into instrumental and executive help-seeking. Instrumental help-seeking referred to a learner used deep learning strategies to clarify problem-solving methods, when encountering difficulties in the learning process. For example, a learner would seek for prompts and clues from teachers, classmates, or others in the problem-solving process. Executive help-seeking referred to a learner used shallow cognitive processing strategies, which simply solved problems but not asked for understanding when encountering learning difficulties that it was comparatively passive and dependent. Furthermore, Marranci (2010) pointed out effort as the degree of a learner being willing to invest time and effort in learning. Lu (2011) discovered that a learner's effort could remarkably predict the learning performance.

Referring to Nie & Kemp (2014), learning behaviors are classified into three dimensions of learning methods, learning habits, and learning attitudes in this study.

1. Learning methods, also called learning strategies, are any activities utilized by a learner for enhancing the learning effect in the learning process (Tetlow et al., 2014).
2. Learning habits are habitual learning behaviors or learning activities (Wang et al., 2014). Habits are learned and auto-tended reactions; behaviors would repeatedly appear and presents persistence that it could reduce lots of time and energy once they become auto-reactions.
3. Learning attitudes. Attitudes, as an important concept in modern psychology, are formed in environments to affect individual behaviors in learning situations (Zhang et al., 2012). Attitudes refer to a persistent and consistent mental response tendency of an individual holding for people, affairs, and objects; such a mental process is composed of individual

cognition, emotion, and behaviors towards people, affairs, and objects.

Relationship between multiple goal orientation and learning motivation

A lot of researchers emphasized that motivation belief of ability belief, expectancy, and value should focus on specific fields, rather than specific activities (Chen & Knight, 2014). Crilly (2011) indicated that younger learners would present distinct ability belief on different learning subjects. In general, a learner's ability belief and work value would become negative when getting older. A learner would present continuous or favorable learning performance when perceiving specific learning importance, interests, and practicability. For example, Graves et al. (2012) discovered that high performance matched with high mastery goal would not cut down the positive effect of high learning goal on math. In the research, learning motivation was measured the perceived importance and practicability of math. It was possible that students with high mastery/high performance were essentially not interested in math, but regarded it primary or practical. Mont et al. (2014) found out higher correlations among mastery goal, self-efficacy, and learning motivation than correlations among performance goal and avoidance performance goal. Moreover, Norman (2013) discovered that multiple goal orientation could better predict the use of learning strategies and the academic accomplishment of participants than performance goal orientation did, and the correlation with learning motivation significantly enhanced performance goal (Onwezen et al., 2013). Soldan & Nankervis (2014) indicated that learners with different goal orientations would gradually reduce the learning motivation as time went by. In regard to self-efficacy, low mastery/low performance students show lowest self-efficacy, while students with high mastery/high performance present descending self-efficacy as time goes by, but still remain the highest among four groups. Regarding learning motivation, students with high mastery/high performance reveal the highest learning motivation in the beginning, but descend as time goes by. The following hypothesis is therefore proposed in this study.

H1: Multiple goal orientation would affect learning motivation.

Relationship between multiple goal orientation and learning behaviors

Self-handicapping is a self-performance strategy when a learner intends to reveal personal ability and value in the learning. Delay and participating in large number of activities are generally used as the causes of bad performance (Chen, 2013). Based on Covington's self-worth theory, a learner intends to use self-handicapping for maintaining a positive self-image. To avoid being stuck a dull label, a learner would use self-handicapping as the reason of failure. Learners with performance goal care about others' evaluation and are afraid of being regarded as incapable that they use avoidance strategies to enhance the image by presenting the success without too much effort. For instance, Dae & Boks (2014) divided help-seeking behaviors into instrumental behaviors to ask for prompts and clues from teachers or classmates and executive behaviors to simply request for answers but not look for understanding when encountering difficulties in the learning process. Hair et al. (2010) pointed out the correlation between learning behaviors and goal orientation as well as significantly negative correlations between learning goal orientation and executive learning behaviors. Moons & De Pelsmacker (2012) discovered that working objectives could better enhance learning behaviors than self-fulfillment did. On the other hand, children explained avoidance in ego-focus situations as covering insufficient ability. Sapci & Considine (2014) found out the correlation between multiple goal orientation and hard learning behaviors. Tang & Bhamra (2012) argued that learners with high learning goal did not necessarily make more efforts,

and it was not necessarily that students with low learning goal would not work hard; however, hard learning behaviors showed remarkable effects on learning performance that a learner's learning quality would be affected by individual multiple goal orientation. The following hypothesis is proposed in this study.

H2: Multiple goal orientation would affect learning behaviors.

Relationship between learning motivation and learning behaviors

Learning motivation is the motive and guidance for a learner's learning behaviors continuously moving and operating towards specific direction or target (Chiang et al., 2014). Apparently, learning motivation not only directly affects an individual engaging in learning behaviors, but also indirectly influences the learning outcomes. Delmas & Lessem (2014) revealed that ones with stronger learning motivation would more frequently use learning strategies that the academic achievement would be higher. In the research on the intrinsic learning of students in Department of Automobile Technique in vocational high schools, Hirst et al. (2011) pointed out the notably positive effects on the learning performance of learning methods and learning attitudes; extrinsic learning motivation revealed significantly positive effects on the learning performance of learning methods, learning attitudes, and learning habits. Besides, both intrinsic learning motivation and extrinsic learning motivation showed remarkably positive effects on the learning performance of total learning behaviors. In other words, learning motivation would notably enhance a student's performance on learning behaviors. Nederveen Pieterse et al. (2011) found out the interaction between learning methods and learning motivation, i.e. learning methods merely presented significant effects on learning motivation, but not on low learning motivation. Oltra et al. (2013) also definitely indicated that a student with strong learning motivation and active learning behaviors could enhance the learning effectiveness. Motivation is essential for learning and would affect learning effectiveness. The following hypotheses are therefore proposed in this study.

H3: Learning motivation presents significantly positive effects on learning methods in learning behaviors.

H4: Learning motivation reveals remarkably positive effects on learning habits in learning behaviors.

H5: Learning motivation shows notably positive effects on learning attitudes in learning behaviors.

RESEARCH METHOD

Research framework

Summing up the above literatures, the conceptual framework (Figure 1) is drawn to discuss the relationship among multiple goal orientation, learning motivation, and learning behaviors.

Measurement of research variables

Learning motivation

Referring to Broms et al. (2010), learning motivation contains two dimensions of (1) internal orientation and (2) external orientation.

Learning behaviors

Referring to the viewpoint of Nie & Kemp (2014), three dimensions of (1) learning methods, (2) learning habits, and (3) learning attitudes are covered.

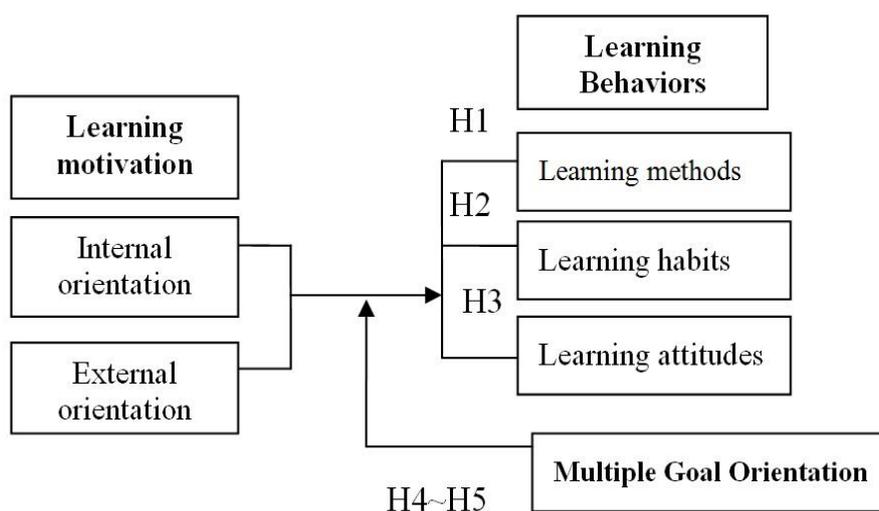


Figure 1. Research framework

Multiple goal

Referring to the viewpoint of Borgstede et al. (2013), four dimensions are classified as (1)mastery approach, (2)performance approach, (3)mastery avoidance, and (4)performance avoidance.

Research subject and sampling data

Public and private universities in Taiwan and Mainland China are selected as the research subjects, including National Sun Yat-sen University, National Kaohsiung Normal University, National University of Kaohsiung, I-Shou University, Kaohsiung Medical University, Zhejiang Normal University, Zhejiang University, Zhejiang Sci-Tech University, Fuzhou University, and Xiamen University. The questionnaires are distributed and collected on sites, and college students in Taiwan and Mainland China are sampled. Total 500 copies of questionnaires are distributed, and 378 valid copies are retrieved, with the retrieval rate 76%. SPSS is utilized for analyzing the data, and Factor Analysis, Reliability Analysis, Regression Analysis, and Analysis of Variance are applied to test the hypotheses.

Analysis method

Analysis of Variance is applied to discuss the difference of the effects of multiple goal orientation on the relationship between learning motivation and learning behaviors, and Regression Analysis is further used for understanding the relationship between learning motivation and learning behaviors.

ANALYSIS

Analysis of reliability and validity anal

With Factor Analysis, learning motivation is extracted two factors of Internal Orientation (eigen value=2.243, $\alpha=0.80$) and External Orientation (eigen value=1.938, $\alpha=0.86$). The covariance explained achieves 84.533%.

With Factor Analysis, learning behaviors is extracted three factors of Learning Methods (eigen value=2.167, $\alpha=0.84$), Learning Habits (eigen value=1.852, $\alpha=0.88$), and Learning Attitudes (eigen value=1.541, $\alpha=0.82$). The covariance explained reaches 78.429%.

Effects of multiple goal orientation on learning motivation and learning behaviors

Variance analysis of multiple goal orientation to learning motivation

Analysis of Variance is used for discussing the difference in multiple goal orientation to learning motivation. From Table 1, multiple goal orientation shows notable difference on internal orientation, and the multiple goal orientations of mastery approach (4.16) and mastery avoidance (4.93) are higher than those of performance approach (3.21) and performance avoidance (2.97) in internal orientation. Multiple goal orientation presents remarkable difference on external orientation, and the multiple goal orientations of performance approach (4.34) and performance avoidance (4.67) are higher than those of mastery approach (3.58) and mastery avoidance (3.46) in external orientation.

Variance analysis of multiple goal orientation to learning behaviors

Analysis of Variance is applied to discuss the difference in multiple goal orientation to learning behaviors. From Table 2, multiple goal orientation reveals notable differences on learning methods, and the multiple goal orientations of mastery approach (3.97) and performance approach (3.67) are higher than those of mastery avoidance (3.24) and performance avoidance (3.08) in learning methods. Multiple goal orientation appears remarkable difference in learning habits, and the multiple goal orientations of mastery approach (4.25) and performance approach (4.13) are higher than those of mastery avoidance (3.34) and performance avoidance (3.18) in learning habits. Multiple goal orientation presents significant difference in learning attitudes, and the multiple goal orientations of mastery approach (4.87) and mastery avoidance (4.56) are higher than those of performance approach (3.59) and performance avoidance (3.37) in learning attitudes.

Table 1. Variance analysis of multiple goal orientation to learning motivation

Variable		F	P	Scheffe post hoc
Multiple goal orientation	Internal orientation	11.583	0.000*	Mastery approach (4.16), mastery avoidance (4.93)>performance approach (3.21), performance avoidance (2.97)
	External orientation	12.391	0.003*	Performance approach (4.34), performance avoidance (4.67)>mastery approach (3.58), mastery avoidance (3.46)

* stands for $p < 0.05$

Table 2. Variance analysis of multiple goal orientation to learning behaviors

Variable		F	P	Scheffe post hoc
Multiple goal orientation	Learning methods	16.752	0.004*	Mastery approach (3.97), performance approach (3.67)>mastery avoidance (3.24), performance avoidance (3.08)
	Learning habits	13.261	0.012*	Mastery approach (4.25), performance approach (4.13)>mastery avoidance (3.34), performance avoidance (3.18)
	Learning attitudes	15.433	0.000*	Mastery approach (4.87), mastery avoidance (4.56)>performance approach (3.59), performance avoidance (3.37)

* stands for $p < 0.05$

Table 3. Analysis of learning motivation and learning behaviors

Dependent variables→ Independent variables↓ Learning motivation	Learning behaviors					
	Learning methods		Learning habits		Learning attitudes	
	β	Beta	β	Beta	β	Beta
Internal orientation	1.723*	0.165	2.326**	0.219	2.541**	0.238
External orientation	1.588*	0.147	2.175**	0.206	2.092**	0.191
F	18.365		22.942		27.633	
Significance	0.000***		0.000***		0.000***	
R2	0.271		0.322		0.358	
Regulated R2	0.021		0.027		0.034	

Note: * stands for $p < 0.05$, ** for $p < 0.01$.

Data source: Self-organized in this study.

Correlation Analysis of learning motivation and learning behaviors

Correlation Analysis of learning motivation and learning methods

From Table 3, internal orientation ($\beta=1.723^*$) and external orientation ($\beta=1.588^*$) reveal remarkable effects on learning methods that H3 is supported.

Correlation Analysis of learning motivation and learning habits

From Table 3, internal orientation ($\beta=2.326^{**}$) and external orientation ($\beta=2.175^{**}$) show notable effects on learning habits that H4 is supported.

Correlation Analysis of learning motivation and learning attitudes

From Table 3, internal orientation ($\beta=2.541^{**}$) and external orientation ($\beta=2.092^{**}$) reveal significant effects on learning attitudes that H5 is supported.

CONCLUSION

The research results show that learners with high mastery present definite and specific goals on curricula, and learners with high interests reveal the best examination and modulation abilities. The former is clear of the learning purpose in the lesson that they could accurately understand the learning motivation and modulate the learning behaviors. Comparing to learners with high mastery, those with low mastery still need to improve the learning behaviors aiming at the learning motivation, while learners with avoidance goal would comparatively learn with avoidance attitudes (e.g. simply for not being laughed at the performance). As they perceive the unsatisfactory level and are afraid of answering questions, the avoidance goal is therefore enhanced; or, perhaps they worry about bad impression to teachers that the avoidance goal is enhanced.

SUGGESTION

Aiming at above research results, the following suggestions are proposed in this study.

1. Feedback for learner learning opinions: It is considered in this study that teachers or trainers could timely provide feedback aiming at learners' self-learning opinion table. For example, making explanation on perceived

learning difficulties allows a learner perceiving the opinions being cared; it also helps such students. Such methods could have learners change the attitudes towards filling in the form and slowly internalize such learning feedback into personal learning.

2. Application of plural methods: In addition to help a learner self-record and monitor with diaries and diagrams, the learner needs to timely make changes when getting used to the original method to fill in the table. An ideal method is to discover that a student could add new elements after getting used to the learning feedback, such as peer reminder, self-designed self-learning opinion table, and online meeting with teaching assistant at fixed time.
3. Construction of mastery-centered learning atmosphere: Better adaptation reveals on performance-approach goal matched with mastery goal. Apparently, mastery goal is the most advantageous goal orientation for learning. As the situational structure would affect a learner's goal orientation, goal orientation could be formed through the improvement of learning atmosphere. In this case, a teacher or trainer could create mastery oriented learning atmosphere as well as encourage and instruct learners to apply deep cognitive strategies so that the learners or trainers could adapt to solving learning difficulties and generate permanent positive learning. A teacher should equivalently stress on learning outcomes and learning processes, encourages learners to compare with themselves, and affirm learners about the constantly progressing learning. It is believed that a learner experiencing meaningful learning processes would reveal positive effects on the strategy application and motivation induction.

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