

*Research on the Relationship Between Reflective Practice and Academic Performance in
Experiential Learning*

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Abstract

This research is based on the manipulation of experiential learning, combined with feedback surveys of reflective practice. The implementation project is three learning activities of creative thinking, advertising script and video shooting in the advertising design course. Based on the learning effect of the project design, the participants go through the four processes of analysis, thinking, execution, and reflection, conduct phased investigations based on individual and team performance, and then proceed to the next project design, and so on. The research results show that there are differences between student team self-assessment, individual self-assessment, and academic performance. There is a moderate correlation between the two variables. There is a positive relationship between self-assessment and academic performance. Students with high team and high individual self-assessment scores will have higher academic performance. Individual self-assessment results can have an impact on academic performance and can also be used as a basis for inferring students' academic performance. The research shows that the learning mode of developing cognition and skills can observe problems, innovate thinking, solve problems through the focus of thinking in the process of project execution, and then provide feedback and improvement through reflection practice, so that the participants' ability and experience can be improved. More importantly, Reflective practice enhances learning outcomes for all learners.

Keywords: Design Education, Reflective Practice, Academic Performance, Experiential Learning

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Introduction

This research focuses on the effectiveness of combining experiential learning with reflective practice, emphasizing the exploration of experiential learning and the benefits of self-reflection. Through the execution of a curriculum design project, the participants in this research were able to move from abstract thinking to concrete execution, challenging themselves, critiquing, evaluating, and making revisions. In addition to challenging conceptualization and improving execution, reflective practice can also help individuals better understand the significance of their knowledge and expertise in terms of the effectiveness of their actions (Finlay, 2008). The research used self-assessment during three consecutive reflective processes as a criterion for effectiveness. Peer review formed a cyclical process of reflection, enabling the participants to identify errors, evaluate and explore better task approaches, and improve their problem-solving skills by addressing the lack of practical experience combined with poor critical thinking. This process enhanced the participants' reflective habits, building their abilities to think proactively and engage in self-directed learning.

Research Purpose

Traditional students' experiential learning often involves sharing learning experiences rather than practical experiences. Without reflection, the learning process lacks the ability to reflect on the meaning behind learning actions, resulting in a lack of experiential exchange. The depth of reflective practice requires practice, especially in the learning stage. If one can internalize reflection as a learning habit and be more open to criticism, challenges, and suggestions, the process will be more effective. Therefore, this research conducted a curriculum operation and effectiveness survey on "experiential learning and reflective practice." The research was conducted by forming task teams with learners and implementing the spiral cycle model of returning to experience, reflecting on observation, focusing on feelings, and reviewing experiences through classroom experiential learning. In each stage, learners conducted self-assessment to trigger discussion, reflection on mistakes, and design modifications to establish new team experiences and cohesion.

Literature Review

Reflective Practice is a core skill and an active, dynamic process. Through the practice of learning experiences, reflective practice becomes a habit, leading to more informed and confident decision-making. The concept of reflective practice was first introduced by Schön (1983), who defined the relationship between reflection and action as a means to improve professional capabilities. Schön proposed two types of reflection, "reflection-in-action" and "reflection-on-action." Reflection-in-action refers to reflective behavior during action, continuously examining one's performance and adjusting behavior in real-time to achieve goals and solve problems. Reflection-on-action, on the other hand, involves reflecting on past experiences, considering one's performance, and improving plans to enhance learning outcomes.

Boud et al. (1985) proposed incorporating "individual emotions and feelings" into a three-step reflective model, consisting of "returning to the experience," "attending to feelings," and "evaluating the experience." Gibbs (1988) introduced the famous Reflection Cycle, also known as Reflective Practices, which is a continuous improvement cycle consisting of six stages: description, feelings, evaluation, analysis, conclusion, and action

plan (see figure 1). Gibbs believed that the importance of reflective practice is to enhance awareness when performing professional tasks, induce reflective behavior, and enable learners to perform better during the practice process (Gibb, 1988), supporting the model of experiential learning.

Reflective practice as a support and development tool in education and social science fields is recognized. In action research and reflective practice, reflection has subjectivity and individuality, and its depth of application requires practice. The creativity of new experiences enhances the universality and effectiveness of action and reflection (McIntosh, 2006). Therefore, reflective students are more capable of engaging in external dialogue and self-communication effectively (Tennyson, 2008). Students can attempt to understand the impact of learning, how to improve learning quality, or new application experiences, connecting the two experiences to ensure that they can achieve better performance in the next stage. In addition to understanding professional knowledge and behavioral issues, the reflection process can also encourage collaboration, ensuring that students learn more effectively. Reflection is critical, and how students face mistakes and listen to others' opinions is the most difficult part for students. Guides can help students recognize learning issues, accept challenges, and cultivate self-confidence, while teachers can improve their teaching methods by asking questions. In addition to open-ended questionnaire reflections, this research evaluated learning outcomes and used the self-assessment scores from the three reflective cycles as the analysis data for this reflective practice survey.



Figure 1: Gibbs' Reflective Circle Theory

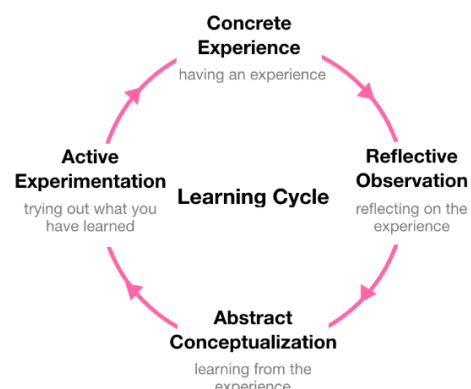


Figure 2: Kolb's Theory of Experiential Learning

To sum up, reflective practice can be said to be a conscious and active process of thinking about the process in order to better prepare for similar events in the future. It is characterized by "learning from mistakes" through strategic, systemic and positive meaning. The advantages of reflective practice are as follows: Reflective practice encourages innovation: Reflective practice can be used as a basis for curriculum adjustment. Adjust, create and experiment with new ideas while learning. Students have a richer learning experience and are more creative, imaginative and ready to adapt to new ways of thinking. Reflective practice encourages participation: Reflection helps to justify decisions and encourages different perspectives and understanding. Focus on student strengths, preferences, development, or the perspectives of others. Reflective practice helps develop confident students: Encouraging students to take on new challenges in their learning builds a safe and confident learning journey.

How Reflective Practice Incorporates Experiential Learning

In 1984, Kolb proposed the cycle theory of experiential learning (Learning Cycle), which includes concrete experience, reflective observation, abstract conceptualization, and active experimentation (Kolb & Wolfe, 1981). It emphasizes that individuals can learn through the process of experience and practice, forming a continuous cycle of learning. Learning is a continuous process of experience transformation and knowledge creation. This dynamic process of knowledge creation is the result of the interaction, conflict, and problem-solving between individuals and the environment. In other words, the process of knowledge creation starts with concrete experience, followed by reflection and observation, formation of concepts and inferences, and testing concepts in new situations (as shown in Figure 2).

Reflection in practice is "learning from experience to gain new insights into self and practice" (Finlay, 2008). The exploration process is prioritized to understand the actions and experiences that may have been overlooked during execution. Reflection challenges the critical practice process of the execution experience, enabling students to understand their professional knowledge and action meanings more deeply. Therefore, reflection in practice is closely related to experience. The level of reflection ranges from self-perspective, action, values, to team communication and relationships, and answers are found from experiences. Students interact with people from different backgrounds and perspectives in collaborative relationships to promote understanding, influence, and guide complex dynamic relationships. Sometimes, experiences may be confusing and unpredictable, and there may not always be a logical or straightforward solution. When faced with situations that do not have correct or wrong answers, students must make professional judgments. However, judgments may be incorrect, and these experiences of failure may cause students to feel frustrated and retreat. If they can re-evaluate how to perceive and handle events, turning negative experiences into positive ones, reflection can become a valuable ability. Figure 3 shows how this study embedded the reflective observation aspect of the experiential learning cycle into the operational mode of the reflection cycle in practice.

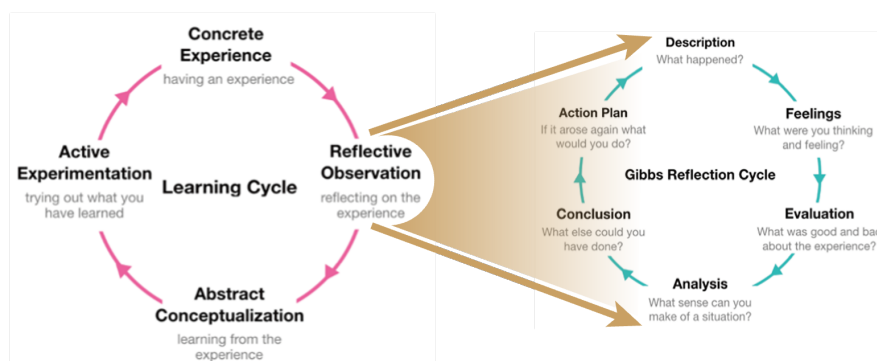


Figure 3: Concept map of experiential learning combined with reflective practice

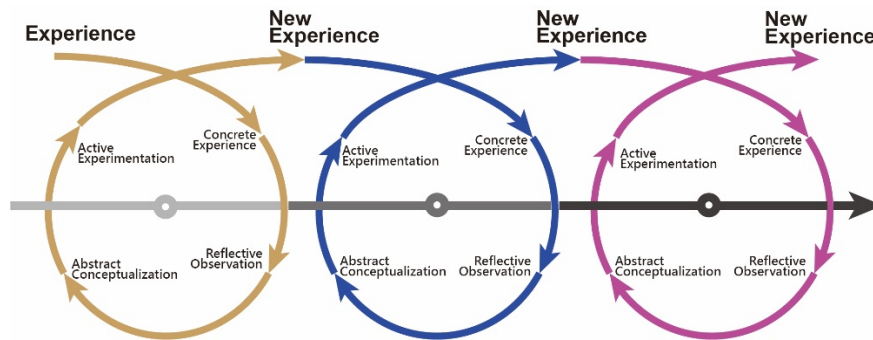


Figure 4: Schematic diagram of the cycle of experiential learning

How experiential learning and reflective practice apply to curriculum and teaching

The student's experiential learning process will be integrated into reflective practice teaching, incorporating flipped teaching, experiential learning, and workplace experiences through social service. Through individual and team reflection training, a review mechanism is formed using the small and large cycle loops (as shown in Figure 4). New experiences are formed by overlaying each other's experiences, and reflective habits are repeatedly accumulated. Students lead the learning process of problem-solving and can observe and reflect on their own learning gaps in each learning stage through concrete workplace experiences. Through teacher support or dialogue with industry experts, students can develop an understanding of the social workplace, which is further applied and verified in the next stage of design work.

However, through the reflection practice training of team and curriculum design, students and teachers can reflect on their project design performance and exchange ideas to see the diversity and individuality of students. Students can choose their preferred way to communicate their learning and decide on reflection expressions or tools to support the team's reflective practice process, in line with the tendency of modern young students to think independently. The teacher's role becomes a supporter of learning, guiding students to seek answers. Such experiential learning, which was previously led by teachers, has been transformed into a domain where students can independently seek answers and verification, addressing the current issues of students' low autonomy, enthusiasm, learning-application gaps, and curriculum focus.

Table 1: Comparison of experiential learning theory and reflective observation activities

Steps	Theoretical basis	Reflective Practice Observation Activities
Concrete Experience	Arouse students' interest by actually participating in activities and specific experiences in the workplace.	Observe or experience the implementation needs in the field of design, examine individual learning problems and obstacles, propose problem descriptions, and trigger learning discussions.
Reflective Observation	Observing industry-university issues and seeking the value of practical experience	Through the experience of practical tasks, students propose situation assessment and practical experience induction, and record emotions and feelings.
Abstract Conceptualization	Analyze the feasibility of practice by thinking and internalizing knowledge and experience	Integrate practical experience and professional skills, propose coping strategies and learning conclusions, establish improvement methods and design revisions.

Active Experimentation	Learning activities that put functional experience and skills into practice	Propose action plans in new design activities and implement specific design strategies and action guidelines to verify the specific effectiveness and value of experiential learning theory and reflective practice on design functions.
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This research focuses on the integration of "reflective practice" and "experiential learning", where students are encouraged to reflect and revise their thinking at each stage of collaborative learning. High-achieving students are organized into experiential learning teams, where they engage in cyclical learning and reflective practices based on individual strengths, to assist their peers with lower levels of engagement and learning outcomes. Students are given greater autonomy and openness in terms of their self-perceived role, learning planning, and team teaming. The reflective practice process is the most important operational procedure, where stage-specific experiences are aimed at problem recognition, marketing planning, design decision-making, and proposal execution, among other processes. Each learning stage and reflective outcome is used as a basis for the next stage, while also reflecting on better execution methods.

Research Design

The research will be based on the individual and team self-assessment results of students' reflection on practice, corresponding to their actual academic performance. Measure whether student team and individual performance improves as a result of reflective loop manipulation. Using the experiential learning model as the foundation, this research aims to reinforce the independence and learning effectiveness of each participating student in the learning team, while also interacting with the execution of design practices in the work team. Traditional experiential learning can achieve short-term team learning pressure and goals for students, and low-achievers and those with inadequate abilities can indeed achieve learning objectives due to peer and time pressure. By incorporating a structured learning exchange system and the support of instructors and TAs as mentors, the lack of autonomous motivation and learning enthusiasm can be avoided, allowing the collaborative learning mode of "learning by doing" to be internalized as a student's independent learning process and method.

Findings

According to the single-sample T test results in Table 2, participants' team self-assessment ($t=49.612$, $P=.000$), individual self-assessment ($t=42.488$, $P=.000$) and academic performance ($t=176.005$, $P=.000$) all three items reached a significant level. It means that there are significant differences in the team self-assessment, individual self-assessment and academic performance of the participants.

According to the results of Pearson correlation analysis (Table 3), the participants' team performance and individual performance ($r=.670$, $p=.000$); team performance and academic performance ($r=.353$, $p=.014<.05$); individual performance and academic performance are ($r=.418$, $p=.003<.01$), and the r values of the three items all exceed 0.3, indicating that there is a moderate correlation between the two ($0.3<r<0.7$).

Table 2: Variable single sample test

Variance	M	SD	T	df	sig	MD	95% confidence	
							lower	upper
Team	7.9475	1.10984	49.612	47	.000	7.94750	7.6252	8.2698
Individual	7.8069	1.27301	42.488	47	.000	7.80687	7.4372	8.1765
AP.	87.6252	3.44924	176.005	47	.000	87.62521	86.6237	88.6268

Table 3: Pearson correlation analysis

Variance		Team	Individual	Academic
Team	Pearson Sig	1		
Individual	Pearson Sig	.670** .000	1	
Academic Performance	Pearson Sig	.353* .014	.418** .003	1

As shown in Table 4 and 4-1, most students belong to high self-assessment and academic performance. The F statistics of team and individual self-assessment results are .251 and .657 respectively, and the significant values are .619 and .422, both of which are greater than the significant level of .05. Indicates that there is no significant difference between the two independent variables. The independent T test of team self-assessment was $T=-1.781$, $P=.082>.05$; the independent test of individual self-assessment was $T=-2.222$, $P=.031<.05$, reaching a significant level. There is no significant difference in academic performance among students who express different team self-assessment performances; however, students with different individual self-assessment performances have obvious differences in academic performance.

Table 4: Statistical data of students' self-assessment and academic performance

High / low academic		N	M	MD	MSE
team	Low team	20	86.5995	3.32872	.74433
	High team	28	88.3579	3.40246	.64300
individual	Low	22	86.4700	3.53124	.75286
	High	26	88.6027	3.11838	.61156

Table 4-1: Independent sample T-test of student self-assessment and academic performance

Academic Performance	Levene		t-test for equality for means						
	F	P	T	df	Sig	MD	SE	95% confidence	
								lower	upper
team	.251	.619	-1.781	46	.082	-1.75836	.98728	-3.74565	.22893
			-1.788	41.62	.081	-1.75836	.98360	-3.74388	.22716
Individual	.657	.422	-2.222	46	.031	-2.13269	.95979	-4.06465	-.20073
			-2.199	42.36	.033	-2.13269	.96996	-4.08964	-.17574

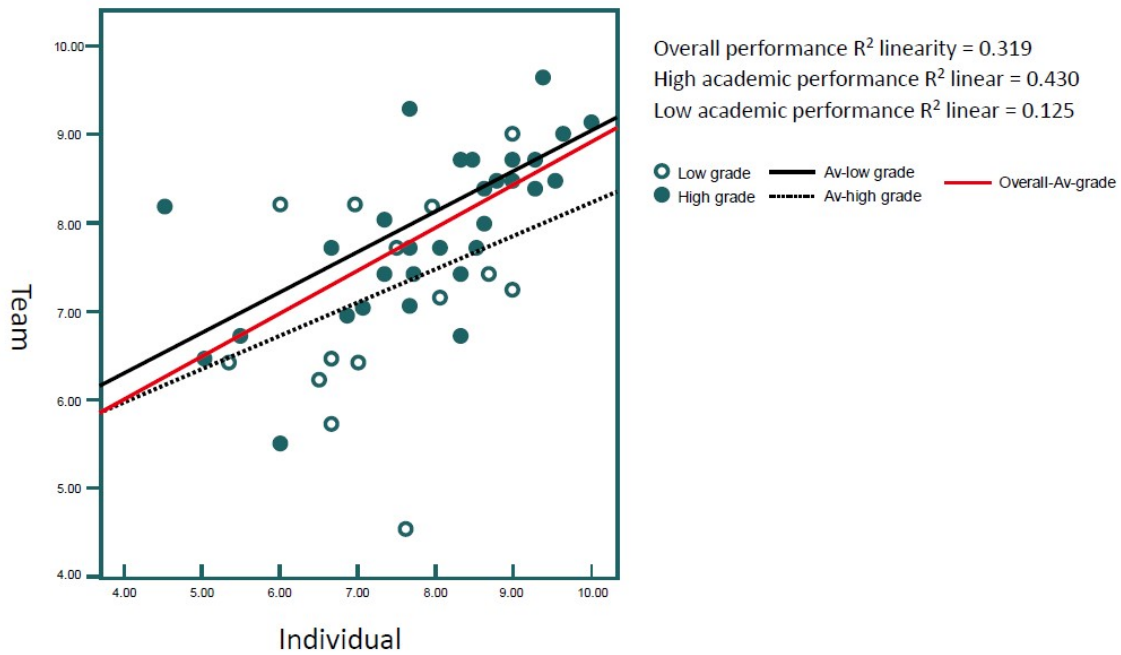


Figure 5: The linear structure relationship between self-assessment grades and academic grades

Table 5: Regression analysis results of team self-assessment and individual self-assessment

model summary				
mode	R	R-square	Adjusted R-squared	Standard Skew Error
1	.391 ^a	.153	.135	3.20843

a. Predicted value: (constant), individual self-assessment

Analysis of Variance^a

Mode	sum of	df	mean	F	Sig	
1	Regressio	85.646	1	85.646	8.320	.006b
	Residual	473.525	46	10.294		
	Total	559.171	47			

a. Dependent number: academic performance

b. Predicted value: (constant), individual self-assessment

coefficient^a

Mode	unstandardized coefficient		standardized	T	P
	B	standard	Beta		
1	(constant)	79.347	2.907	27.29	.000
	Individua	1.060	.368	.391	2.884

a. Dependent number: academic performance

According to the linear structure diagram (Figure 5), the best fit line shows that the regression line of the overall academic performance can explain 31.9% of the variance; high academic performance can explain 43.0% of the variance and low academic performance can explain 12.5% of the variance. Individual performance is directly proportional to team performance. The better the individual self-assessment performance, the better the team self-assessment performance, and the higher the academic performance. Those with high self-assessment performance will also have higher academic performance.

Discussions and Conclusions

The research results can echo the four learning processes that students experience: analysis, thinking, execution, and reflection. Students can reflect and improve through the feedback of reflective practice. In addition to gaining professional ability and progressive experience, more importantly, reflective practice can improve the learning of all learners. grades and achievements. The research results show that the operation of experiential learning combined with reflective practice can increase the learning mode of designing professional ability and developing cognition and skills. Feedback for reflection and improvement. Participants' abilities and experiences are progressive, and more importantly, reflective practice enhances the achievement and effectiveness of all learners.

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