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The Effectiveness of the Growth Mindset Program in Developing the Projects Proposal Writing Skills

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Abstract

The purposes of this research were 1) to construct a growth mindset program on improving the ability of teacher professional students to prepare projects 2) to examine the impact of the growth mindset curriculum, and 3) to examine the mental shift that occurs in students who get growth mindset instruction. Four-year education students in two classrooms were split into experimental and control groups at random. The trial phase of a teaching program's development was used, and data were gathered using research instruments including a project writing test and a mentality evaluation. In the analysis, the independent t-test and one-way ANOVA with repeated measures were utilized as statistics. The study's results showed that using a growth mindset program, the experimental group's pre-learning project writing achievements differed from post with a statistical significance of 0.01, its post-learning project writing achievements differed from the control group with a statistical significance of 0.05, and its pre-learning, post-learning, and follow-up mindset changes with mean scores that were not different from each other.

Keywords: growth mindset, writing skills

1. Introduction

A continuous education management process by teachers with expertise in learner development and learning management is necessary to improve students' potential as valuable human resources. Mentality is an intriguing idea, according to a study on the growth of youths' knowledge and learning capacities. To put it another way, mindset is a belief about oneself and the majority of a person's fundamental characteristics in various areas, such as thoughts about their competency, intelligence, talents, or personality to help a person realize their potential through interactions with the environment, forming a concept of oneself and creating a framework that people believe in (Dweck, 2006, pp. 6–7).

According to Dweck, a person's perspective is what separates successful individuals from unsuccessful people. While those with a growth mindset think that their competency can be developed by effort and that their intelligence and competency are only the starting point, those with a fixed mindset believe in their characteristics, such as intelligence, talents, competency, etc., and believe that they can be successful with their intelligence, talents, and competency regardless of any effort. Because of this viewpoint, learners develop a passion for learning, which is the cornerstone of success in life. As a result, encouraging learners to adopt a growth mindset would aid to advance learning.

Dweck and Mueller conducted research on teaching methods for cultivating a growth mindset in 1998 Mueller and Dweck (1998), concluding that teachers' compliments of students' intelligence had a greater detrimental impact than the compliments of their efforts. One way to facilitate the transition is to embed. It is important to consider how the structure of a class and how the content is taught may affect students' mindset orientations (Dweck, 2015). According to a review of documents and related studies, growth mindset development is linked to bettering undergraduate students' academic writing abilities (Ryan, 2016). An experimential learning module to prime students for achieving grit through growth mindset revealed that students appear to begin to take responsibility for their own personal and professional success and development (Pueschel & Tucker, 2018). Failing students can succeed if they are motivated to use a growth mindset and given individualized support to improve their writing abilities (Emmanuel, Markopoulos, Benson, Chaseling, & Paredes, 2022). Academic writing is a fundamental skill for teacher professional students who must practice learning management by

applying both theoretical and practical knowledge for the benefit of students and themselves. However, it can also improve a person's pursuit of professional qualifications and occupational achievements (Graham, 2019). Because of this, the researcher is interested in creating a growth mindset program that enhances academic writing skills by examining the writing projects completed by teacher professional students for students in the Faculty of Education who will graduate to become teachers with the ability to develop both themselves and their students in the future.

2. Method

2.1 Population

The population consisted of 90 fourth-year education students from 4 classrooms that are enrolled in the second semester of the academic year 2021.

2.2 Samples

In the second semester of the academic year 2021, two classrooms of fourth-year students in the Faculty of Education were chosen at random from all other classrooms. Randomly selected students from both classes were split into an experimental group and a control group.

2.3 Variables

1) There are two independent variables:

The trial's conditions were split into two categories: taking part in a teaching program created by the researcher, and not taking part in the researcher's teaching program (using normal teaching).

The trial was divided into 3 phases, namely pre-trial, post-trial, and follow-up.

2) The dependent variables include mindset and students' project achievement.

2.4 Conceptual Framework

The following learning management techniques were applied in this study to assist teacher professional students in strengthening their capacity to design projects:

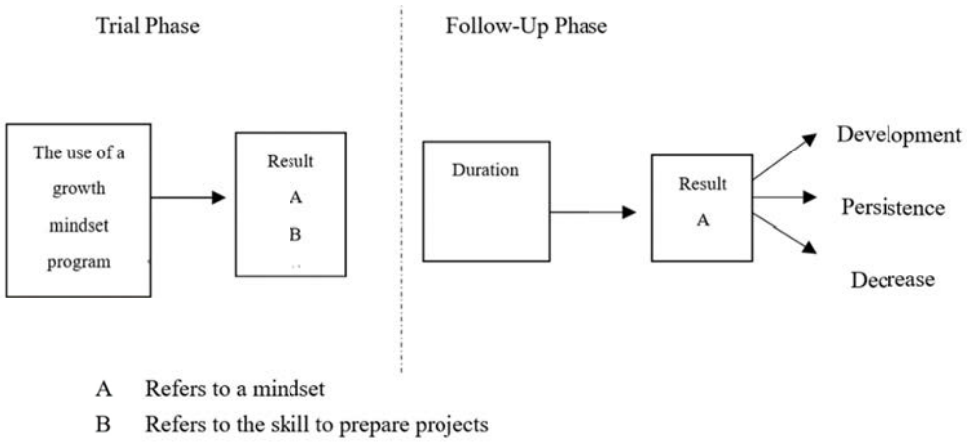

Figure 1. Conceptual framework

2.5 Methodology

Step 1: Develop a teaching program and research instruments

A growth mindset program was created by researching theories and ideas related to mindset, altering one's mindset, and then creating projects and activities with content structures that support a growth mindset based on the idea of encouraging difficult tasks. Six sessions of two hours each, for a total of 12 hours, are recommended for teachers to provide feedback to help students build a positive attitude and growth mentality. Three experts reviewed the framework, and it was then changed in response to their recommendations.

Table 1. The concept of a growth mindset program

Purposes	1. Learners can develop their growth mindset.
	2. Learners can apply a growth mindset in various situations to accomplish tasks.
Development Guidelines	1. Motivations related to challenges and not giving up on barriers are pushed.
	2. Learners set goals for success at work and take responsibility for their own goals by building a positive attitude.
	3. Learners find inspiration from the success of others by exchanging work experiences with each other to learn from the practice of others with fun and eagerness to learn more.
	4. Use words to praise students' efforts and stimulate the need for self-development and learners learn from criticism.
Activities	1. Self-introduction and using questions to create a growth mindset
	2. Self-survey and accepting strengths and flaws lead to the desire to change oneself and set development goals, such as the skill to prepare projects.
	3. Set guidelines for self-transformation and change the environment to be conducive to self-development.
	4. Learners set goals and expectations for each activity and record the self-assessment.
	5. Teachers encourage learners to think, write, speak, brainstorm ideas, and exchange opinions and learners see what they like and want to improve it.

Table 2. The concept of developing the skill to prepare projects

Purposes	Learners understand the principles of preparing projects.
	Learners can develop their skills to prepare their projects.
Development Guidelines	1. Study the thinking process and how to prepare a project.
	2. Study the components of the project and outline the project.
	3. Analyze the characteristics of a good project.
	4. Practice preparing projects.
Activities	1. Learners study the writing style of the project from the example.
	2. Learners plan for the project and outline.
	3. Learners present the project outline in front of the class and edit it.
	4. Learners help each other present research resources for writing.
	5. Learners practice writing projects.
	6. Present work and exchange knowledge by guiding learners to see the pros and cons of writing projects with teachers' and friends' help and learners improve based on the suggestions.
	7. Students help each other select well-written projects as sample work for peers.

Step 2: Develop a Conceptual Assessment Form

Study the concept of a conceptual framework. Then, draft an assessment form according to the following structure:

Table 3. The structure of mindset assessment tool

Structure/Definition	**Fixed Mindset**	**Growth Mindset**
1. Beliefs about existing abilities, such as intellect, innate talent	1.1 You have favourable and unfavourable courses.	1.1 You can learn every course you want to study.
	1.2 Writing ability is an innate talent that cannot be changed.	1.2 Writing skills are something that everyone can develop.
2. Persistence in ability development and relentless effort	2.1 When you start doing something and you encounter obstacles, you will not do that.	2.1 If you find obstacles, you will try to solve a problem.
	2.2 You like simple tasks that do not require effort.	2.2 You are proud of yourself when you put in the effort and ability to work.
3. A love of learning and acquiring more knowledge on what one does not know or is not good at.	3.1 If you are not good at speaking, you don't have to try to do it.	3.1 If you are not good at speaking, you need to improve it.
	3.2 Writing a project is too difficult.	3.2 Project writing is interesting to learn.

Before evaluating the 5-scale conceptual framework assessment, three research and academic evaluation specialists examined the suitability and consistency of definitions and questions and improved the questions following the suggestions.

To examine the reliability and discrimination power of the evaluation the researcher designed, 30 students from

the Faculty of Education who were not part of the sample group took it in the fall of 2021. The t-test with a statistically significant difference of .05 was used to compare the high group and low group on a question that had the ability to discriminate, and the reliability of the assessment was also examined.

A project writing test that includes defining the project name, the person in charge of the project, principles and reasons, objectives, procedures, project implementation duration, budget, project follow-up and evaluation, and expected benefits is the tool for data collection for pre-and post-tests. The content validity of the tool was evaluated by the researcher by computing the IOC from three experts.

2.6 Trial Phase

1) The researcher conducted the experiment and gathered the data after developing instruments for research and quality. The experimental group and the control group were each made up of one classroom (26–30 students), fourth-year students from the Faculty of Education, and there were no differences in the students' average learning grades between the two groups.

2) Prior to the study, the researcher had the students in both the experimental group and the control group complete a mindset evaluation form and write a proposal.

3) The instruction was given by the researcher. The researcher created a growth mindset program for the experimental group. The normal teaching strategy was used with the control group.

4) The student's writing project was graded using the re-examination method, which involved having it examined and reexamined after a week. The average of the results from the two examinations was then calculated. Then, a mental evaluation was required of each sample.

5) Following that, for one month, no samples received a growth mindset promotion. Both experimental and control students were required to retake the project writing test and a mindset evaluation after a month. The results of all the scores were then examined using statistical techniques.

2.7 Statistics in Research

1) Analyze the impact of a growth mindset program on the completion of writing assignments.

To conduct a dependent t-test study comparing how well writing assignments performed before and after following a growth mindset program.

To compare the performance of the experimental group using the program to the control group using an independent t-test to determine the impact of employing a growth mindset program on writing project completion.

2) Utilizing a one-way ANOVA with repeated measures, examine how students who participated in a growth mindset program in the classroom changed their perspectives and project writing abilities.

2.8 Compliance with Ethical Standards

Written legal guardian informed consent was obtained before using the samples in this study. The Institute of Physical Education Research Ethics Committee gave its approval to the study protocol, which has research number 071/2021. It was an application for complete board review approval. Date of approval: 7 Feb 2021.

3. Results

Part 1: Comparison of instructor professional students' writing project results before and after implementing a growth mindset program

Table 4. Analysis of the effects of a growth mindset program on the project writing performance of teacher professional students

Results	Assessment Score				t	df	p
	Before using a growth mindset program (n = 27)		After using a growth mindset program (n = 27)				
	$\bar{x}$	S.D.	$\bar{x}$	S.D.			
Achievement in Project Writing	7.89	0.75	8.74	0.90	-3.769**	52	.000

Note. ** p < .01.

When teacher professional students' writing project accomplishments were compared in Table 4 before and after using a growth mindset program, it was discovered that there was a statistically significant difference between

the mean project writing achievement scores of the pre-learning experimental group using a growth mindset program and the post learning group ($t = -3.769$, $df = 52$, $p < 0.01$). The experimental group's project writing post-learning outcomes using a growth mindset curriculum was better than pre-learning.

Part 2: Comparison of the experimental group participating in a growth mindset program and the control group's performance on writing assignments by teacher professional students

Table 5. Analysis results of the achievement in project writing of teacher professional students in the experimental group with a growth mindset program and the control group

Result	Assessment Score				t	df	p
	The experimental group after using a growth mindset program (n = 27)		The control group with a regular teaching (n = 26)				
	$\bar{x}$	S.D.	$\bar{x}$	S.D.			
Achievement in Project Writing	8.74	0.90	8.23	0.76	2.215*	51	0.031

Note. * $p < .05$.

By using a t-test to compare the outcomes of the writing project achievements of teacher professional students in the experimental group with a growth mindset program and the control group, it was discovered that the experimental group's mean scores differed from the control group's with regular teaching with a statistical significance of 0.05 ($t = 2.215$, $df = 51$, $p < 0.031$). The experimental group using a growth mindset program demonstrated greater project writing proficiency than the control group using conventional instruction.

Part 3: The result of changes in the mindset of students with a growth mindset program

Table 6. Analysis results of changes of mindset of teacher professional students with a growth mindset program in pre-learning, post-learning, and follow-up (n = 27)

Mindset	$\bar{x}$	S.D.	Variance	SS	df	MS	F	p
Pre-trial	35.93	5.51	In a group					
Post-trial	35.44	3.95	Duration	12.519	1.975	6.340	0.235	0.789
Follow up	36.41	4.59	Error	1,385.481	51.337	26.988		

Note. SS = Sum of Squares**,** MS = Mean Square.

Table 6 compares the means of the experimental group's mindset changes during the pre-learning, post-learning, and follow-up phases of a growth mindset program using one-way repeated measurements. Using an ANOVA, it was discovered that the experimental group's mean mindset change scores at the pre-learning, post-learning, and follow-up periods did not differ in a statistically significant way ($F = 0.235$, $df = 1.975$, $p > 0.05$).

4. Discussion

According to the result, there were key issues for discussion as follows.

1) There was a statistically significant difference between the mean project writing achievement scores of the pre-learning experimental group using a growth mindset program and the post learning group. The experimental group's project writing post-learning outcomes using a growth mindset curriculum was better than pre-learning. These conformed to the finding of Emmanuel, Chaseling and Boyd (2019) Effective academic writing has the potential to enhance the experience of tertiary studies, increase academic success, and reduce attrition. Growth mindset development is linked to bettering undergraduate students' academic writing abilities (Ryan, 2016)

2) The experimental group using a growth mindset program demonstrated greater project writing proficiency than the control group using conventional instruction. The result implied that resources, opportunities, and relationships are important. Writing project by exchanging work experiences with each other and learn from the practice of others enabled the students to build incrementally on their skills. These conformed to a study about growth mindset (Blackwell et al., 2007) that found teaching students about growth mindset theory promoted positive change in classroom motivation, compared to a control group.

3) This study found that persistence plays a role in growth minded students as the experimental group's mean mindset change scores at the pre-learning, post-learning, and follow-up periods were not significantly different. A big aspect of mindset is persistence (Dweck, 2006). In this study, the students in the experiment group were provided with growth feedback while they work to write the project proposal. Students were also rewarded brain

points throughout each level for each new progress of writing they tried.

Mindset and academic performance constitute a positive feedback loop which could be leveraged by researchers and practitioners to design more persuasive and effective mindset interventions to promote student success (LB Limeri et al., 2020).

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