

MINDSET AND PSYCHOLOGICAL ATTRIBUTES FOR LEARNING TO EMPOWER UNIVERSITY STUDENTS' COMPETITIVENESS

¹Rozainee Khairudin, ²Zainah Ahmad Zamani, ^{3*}Fatimahwati Halim, ⁴Mohamad Rahim
Kamaluddin

ABSTRACT--*The development of a nation's economy is dependent on the source of its workforce. In this regard, a recent issue that has become a priority is the employability of university students. Consistent with the Malaysia Education Development Plan (Higher Education), Higher Education Institutions are required to produce competent, holistic and competitive students. To date, findings from studies are inconsistent to determine the main factors that influence university students' achievements in academic achievement that may lead to their future employability. Following this, the current study explores constructs that are necessary to cultivate university students for success and lead to higher chance of employability. Therefore, the aim of the current study is to examine the relationships between mindset and self-efficacy towards academic achievement and employability. Two sets of survey research were carried out to achieve the purpose of study. Study 1 involved 200 university students from both public and private universities. These respondents completed the Dweck's Theories of Intelligence Scale and College Self-Efficacy Instrument. Results from study 1 showed a significant difference in growth mindset between public university students and private university students. Results also revealed significant relationships between mindset and academic achievement, as well as between self-efficacy and academic achievement. Furthermore, it was evidenced that mindset and self-efficacy are able to predict students' academic achievement. In study 2, 137 university students from both public and private universities took part in the study. Mindset was measured using Dweck's Theories of Intelligence Scale, while employability was measured using the Employability Questionnaire. Results from study 2 showed that there is a significant correlation between growth mindset and employability. Findings from these two studies confirm that mindset, particularly, can be a determiner towards university students' achievement and employability. The implication that can be deduced from the findings is that higher institutions*

¹Faculty of Social Sciences and Humanities, The National University of Malaysia, Bangi, Malaysia.

²Faculty of Social Sciences and Humanities, The National University of Malaysia, Bangi, Malaysia.

^{3*}Faculty of Social Sciences and Humanities, The National University of Malaysia, Bangi, Malaysia, atisha@ukm.edu.my

⁴Faculty of Social Sciences and Humanities, The National University of Malaysia, Bangi, Malaysia.

should focus on individual differences, in this case, improving students' mindset and self-efficacy to determine high achievement that includes both academic and employability.

Key Words--*mindset, self-efficacy, academic achievement, employability, university students*

I. INTRODUCTION

The economic growth and development of a country are much dependent on its workforce. As such, it is imperative for a developing country that is striving towards being a fully developed country like Malaysia to have a workforce that is effective and productive. The world is facing so many challenges in the 21st century. Globalization or a world without boundaries has brought such an impact on countries, particularly developing countries like Malaysia. Globalization is a process of global economic, political and cultural integration. "The history of globalization goes back to the second half of the twentieth century, the development of transport and communication technology led to situation where national borders appeared to be too limiting for economic activity" (Economic Globalization in Developing Countries, 2002). Globalization is playing an increasingly important role in the developing countries. It can be seen that, globalization has certain advantages such as economic processes, technological developments, political influences, health systems, social and natural environment factors. It has a lot of benefit on our daily life. Globalization has created new opportunities for developing countries. Such as, technology transfer holds out promise, greater opportunities to access developed countries markets, growth and improved productivity and living standards. Certainly, these opportunities, or I would say challenges will affect people, particularly a country's workforce. When there are challenges, there will be competencies that are required to deal with the challenges.

Challenges to the 21st century workforce

What are the competencies that are required to cope with challenges? Burrus, Jackson, Xi and Steinberg (2013) have identified 15 components that are important through their principal component analyses (PCAs). These are problem solving, mechanical skills, service orientation, cultural literacy, business literacy, science literacy, civic literacy, information processing, athleticism, visual acuity, fluid intelligence, communication skills, teamwork, achievement/innovation, and attention to detail/near vision. What is interesting is that the 15 Components were then ranked in importance using the mean component scores over all occupations, 5 competencies stand out as important for most occupations: problem solving (e.g., complex problem solving), fluid intelligence (e.g., category flexibility), teamwork (e.g., cooperation), achievement/innovation (e.g., persistence), and communication skills (e.g., oral expression). Note that the first two ranked most important are cognitive abilities. This highlights the utmost important competency is cognitive in nature (i.e. problem solving).

What is a growth mindset?

The concept of growth mindset was synthesized by Prof Carol Dweck, a Stanford psychologist through her book entitled *Mindset: The New Psychology of Success*. A mindset, according to Dweck, is a self-perception or self-theory that a person holds about him or herself. Believing that the self is smart or intelligent is a simple example of a mindset. This concept evolved from the phrase “implicit theory of intelligence” (Dweck & Leggett, 1988; Levy & Dweck, 1999; Dweck, 2000) which was based on previous research by Dweck and Legget (1988) stated Dweck (Dweck & Bush, 1976; Dweck, Davidson, Nelson, & Enna, 1978) regarding attribution of failure feedback.

Previous studies have been using the phrase “implicit theory of intelligence” generally over the past decades. Lately, many scholars have replaced the phrase with the term mindset (Gutshall, 2013, 2014; O’Rourke, Haimovitz, Ballwebber, Dweck, & Popovic, 2014; Esparza, Shumow, & Schmidt, 2014). The terms growth mindset and fixed mindset have also been used by Dweck (2006) to represent incremental and fixed implicit theories.

that fixed and growth mindsets contribute as frameworks for individuals to interpret and respond accordingly related to the events they experience. As an example, when someone believes that their intelligence is not static and can be increased, poor performance in their perspective marks the need for increase in efforts and better strategies to succeed. This belief resembles growth mindset and the potential for success in the future is better.

Following this, my proposal is that having the right mindset is important to ensure an effective workforce. In particular, the growth mindset. The reason is that complex problem solving is often associated with intelligence. Some researchers believe that intelligence can be formed in the individuals. To build this in a person, the person has to have a growth mindset and not fixed mindset. There have been studies that have shown relationships between growth mindset and high achievement in academic. Tirri and Kujala (2016) found that learning process is associated with students’ mindsets. They also stated that mindsets are adaptive. These findings support Dweck’s theory on mindset. Meece and Holt (1993) found that science grades were high when they are associated with the orientation of growth mindset. Stipek and Gralinski (1996) also found that higher grades and test scores at the end of study among students that have growth mindsets when compared to students who believe that intelligence is fixed. Yeager and Dweck (2012) have shown that academic performance as a correlate to growth mindset. They also found that this view can lower the aggressiveness and stress in youths that will lead to excellent academic performance. From the perspective of neuropsychological mechanism,

There also has been a perspective of researchers that believe effective problem solving skills in graduates are very important to be considered by employers in making decision on personnel selection (Stiwne & Jungert, 2010).

This perspective reflects a gap in problem solving skills that are sought by employers in graduates that are not taught in academic programmes, especially at universities. 21st century employers seek workers who possess a set of general skills, in other words, somebody that is able to solve real world problems by collaborating across many contexts. However, academicians teach problem solving skills specifically in their own discipline (Stiwne & Jungert, 2010). Skills like problem solving are poorly defined. It actually covers various aspects from non-mechanical thinking to high cognitive processes, creativity, and adaptive leadership (Halpern, 1998). In relation to graduate employability, Preet (2015) states that one's ability to proceed in solving complex problems (an ability that is sought after by employers) is functioning from the person's identity and belief. Preet (2015) refers identity as the belief of who the person wants to be and this determines the formation of other skills. Therefore, the issue of identity must be addressed to improve graduate employability. The emphasis on identity refers on mindset, that is, one's belief on learning (an aspect of identity). Similar to Dweck (2006), Peet (2015) also believes that students with a growth mindset are more able to solve difficult tasks in comparison to students with fixed mindset. Students with a growth mindset believe that they are able to learn well. A growth mindset can also form an individual in becoming high and long-term achievers. A person with a growth mindset is more likely to persevere in achieving long term goals (Peet, 2015).

II. METHODOLOGY

There are two sets of separate surveys carried out in the study. The first survey consisted of 200 respondents (100 undergraduate students from public universities and 100 undergraduate students from private universities). The instruments used in the first survey were Dweck's Theories of Intelligence Scale (Dweck, 1999) and College Self-Efficacy Instrument (Solberg et al., 1993). In this survey, academic achievement was measured from the cumulative grade point average (CGPA). In the second survey, there were 137 undergraduate students (109 from public universities and 28 from private universities). The questionnaires used in this set of survey were Dweck's Theories of Intelligence Scale (Dweck, 1999) and Employability Questionnaire (Fatimah wati et al., 2017). The locations of the universities are in Klang Valley and Selangor.

Analyses used for all three sets of surveys were Pearson Correlation and t-test.

III. RESULTS

From the first set of survey, the descriptive analysis showed that there were more students having fixed mindset (69%) than students having growth mindset (31%). This is shown in Table 1.

Table 1:Percentage of respondents according to types of mindset

Types of mindset	Number (N)	Percentage (%)
Fixed	138	69.0
Growth	62	31.0
Total	200	100.0

The descriptive analysis on the distribution of CGPA showed that most students in the sample population fall under the category of CGPA 3.67 – 4.00. The least number of students fall into the category of CGPA 0.00-1.99. The distribution is shown in Table 2.

Table 2:Percentage of respondents according to CGPA

CGPA	Number (N)	Percentage (%)
0.00-1.99	16	8.0
2.00-2.49	50	25.0
2.50-2.99	38	19.0
3.00-3.33	21	10.5
3.34-3.66	20	10.0
3.67- 4.00	55	27.5
Total	200	100.0

Descriptive analysis showed the percentage of students according to self-efficacy. Table 3 shows that most students have moderate self-efficacy (89.5%).

Table 3:Percentage of respondents according to self-efficacy

Score	Number (N)	Percentage (%)
Low	17	8.5
Moderate	179	89.5
High	4	2.0
Total	200	100.0

Pearson Correlation analysis showed that there was a significant positive correlation between academic achievement and growth mindset ($r = 0.651$, $p < 0.001$). This means that the more the person is having a growth mindset the more the person is high in his or her academic achievement. There was also a significant negative correlation between fixed mindset and academic achievement ($r = -0.636$, $p < 0.001$). On the contrary, the more the person is fixed mindset the less achievement the person has on his or her academic achievement. The results are shown in Table 4.

Table 4:The relationship between academic achievement and mindset

	Types of Mindset	N	Pearson Correlation (r)
Academic Achievement	Growth	200	.851**
	Fixed	200	-.636**

$p < 0.001$ **

Pearson correlation analysis also showed that there was a significant positive relationship between self-efficacy and academic achievement ($r = 0.498, p < 0.001$). This means that the higher a person is on his or her self-efficacy, the higher is his or her academic achievement. This is shown in Table 5.

Table 5:The relationship between academic achievement and self –efficacy

	<i>N</i>	<i>Pearson Correlation (r)</i>
Self-efficacy		
Academic Achievement	200	.498**

$p < 0.001$ **

There was also a significant positive correlation between self-efficacy and growth mindset ($r = 0.425, p < 0.001$). The more the person is having the growth mindset the higher is the person’s self-efficacy. However, there was a significant negative correlation between fixed mindset and self-efficacy ($r = -0.343, p < 0.001$). This shows that if the person is high on his or her fixed mindset the lower is his or her self-efficacy. Table 6 shows the results.

Table 6:The relationship between self-efficacy and mindset

	<i>Types of Mindset</i>	<i>N</i>	<i>Pearson Correlation (r)</i>
Self-efficacy	Growth	200	.425**
	Fixed	200	-.343**

T-test was carried out on the data. T-test showed that there was a significant difference in growth mindset between public university students and private university students. Private university students (Mean = 3.8) were more in their growth mindset compared to students (Mean = 3.4) from public universities ($t = -2.58, p < 0.05$). There was no significant difference in fixed mindset between the two types of universities ($t = 1.17, p = 0.2$). Table 7 shows results growth mindset and Table 8 displays results for fixed mindset.

Table 7:Displays results for fixed mindset.

Types of institution	<i>N</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>df</i>	<i>t</i>	<i>Sig.</i>
Public	100	3.383	1.229			
Private	100	3.800	1.042	192.837	-2.585	0.010

Table 8:

Types of institution	<i>N</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>df</i>	<i>t</i>	<i>Sig.</i>
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institution		Dev.	
Public	100	3.647	0.880
		198	1.171 0.243
Private	100	3.500	0.892

In the second set of survey, correlation coefficient analysis showed a significant positive correlation between growth mindset and employability ($r = 0.221$, $p < 0.005$). This means that the more the students are having a growth mindset, the more perception of employability they possess.

IV. DISCUSSION

What can be taken from these findings? First of all, it is clear that growth mindset is crucial in achieving an effective workforce that will lead to productive organizations. It is also proposed that growth mindset and specific psychological attributes be incorporated into the learning environment at universities. These are very essential as literatures have proven that these factors can predict students' competitiveness. By being competitive, students can be secured of their employability in the future.

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