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THE EFFECTS OF CAUSAL ATTRIBUTION ON ACADEMIC PERFORMANCE

Ching-Hsing Lin

Department of Nursing, Tajen University, Pintung, Taiwan
linch@tajen.edu.tw

Su-Fang Wu

Department of Social Work, Tajen University, Pintung, Taiwan
suwu@tajen.edu.tw

Yi-Jung Chen

Institute of Human Resource Development, National Kaohsiung University of Applied Sciences, Kaohsiung, Taiwan
jackie@kuas.edu.tw

Mei-Kuei Huang

Department of Social Work, Tajen University, Pintung, Taiwan
rosehuan@tajen.edu.tw

Abstract

The importance of causal attribution in relation to success and failure in school exams has been well established for some decades. However, early studies have focused on attribution to a limited number of factors, considering effort, innate ability, luck, and difficult exam paper. The purpose of this research is to find out more about what university students in Taiwan believe to be major factors influencing their academic performance, and how teachers may help them to improve their results by attention to these. Rather than present students with a priori categories,

we applied open ended questionnaires as research method, asking students for their own reflections about factors influencing their exam results. Subjects were 60 students at a University in South Taiwan. We found that the successful students generally reported a positive attitude toward teachers and were interested in the course, and devoted a great deal of time to study. Students who failed the exam attributed this mainly to lack of time for study, but very few mentioned lack of ability. Besides effort, ability, luck, and exam difficulty, there are many other remediable causes of academic success and failure to be explored, and further dimensions to be considered include the socioeconomic situation, and teaching skill.

Keywords

Attribution, Academic Performance, Ability, Effort, Culture

1. Introduction

Asians generally perform better than others in academic exams (Lee, 1987). One reason for this may be attribution of success and failure to degree of effort. Asians generally see success as a result of hard work. Asian students tend to attribute any failure in academic performance to lack of effort and push them to try again. Many Caucasian mothers believed that their children were progressing well in school, even though these children still demonstrated low achievement relative to the cultural norms. Despite parents' highly favorable evaluations of their children's general cognitive abilities, there were no overall differences in cognitive ability among American, Chinese, and Japanese children. There is consensus among educationists that the amount of time Asian students spend on school work is much more than that spent by their American counterparts (Stevenson, Lee, & Stigler, 1986; Boruchovitch, 2004).

Students might value effort more if they were led to read stories describing how people succeed despite initial difficulties and failures, through working hard (Rest, Nierenberg, Weiner, & Heckhausen, 1973; Whitehead & Mitchell, 1987). Some studies have attributed academic achievement of Asian students to the family beliefs, and a greater motivation towards educational status (Hess, Chang, & Mcdevitt, 1987). However, Chinese student's attitudes about the necessity of working hard are already deeply influenced by their family and cultural beliefs, and yet many still fail their exams (Hess, Chang, & Mcdevitt, 1987). The question is what do the students themselves believe to be the reasons for this?

The purpose of this research is to find out more about what Chinese students believe to be major factors influencing their academic performance, and how teachers may help them to improve their results by attention to these. Our study examined reflections among university students in Taiwan, in the context of attribution theory (Weiner, 1974, 1985, 1988). We explore whether Weiner's theory alone is adequate to explain differences which have multifactorial and sociological dimensions.

2. Literature Review

2.1 The Attribution Theory of Academic Performance

The importance of causal attribution in relation to success and failure in school and university exams has been demonstrated by Weiner (1974, 1985, and 1988) and has been well established for some decades as a developing topic. Weiner and his associates proposed an attributional model which assumed that, upon experiencing success or failure, individuals make causal judgments, and these judgments can indirectly determine achievement behaviors through an individual's performance expectancy and affective responses (Weiner, 1985). According to this theory there are four causes perceived as most responsible for success and failure: ability, effort, task difficulty and luck. Weiner even specified three dimensions: locus of causality, stability and controllability in which to measure these causal elements. According to Weiner and Peter (1973), the patterns of attribution and evaluation in achievement may be applied universally, and are not limited to one country or culture (Salili, Maehr, & Gillmaore, 1976).

Subsequently studies also supported the finding that there is a high degree of consistency between cultures with regard to presumed attribution dimensions (Weiner, 1985). This would mean that the present conceptual framework of attribution theory has cross-cultural applications and validity. The assumption that effort and ability are perceived across cultures in the same manner on the dimension of controllability has been argued by Schuster, Forsterling and Weiner (1989). They suggest that effort is perceived as controllable, while ability is not. Successful students usually have different ideas from failing ones, about the reasons for their results. Success was usually attributed to short and long term effort, innate ability, and teacher's help. Failure was generally attributed to lack of effort and ability, and a difficult test. Successful students tended to emphasize the effort they had made, while failing students attributed failure more to lack of innate ability.

2.2 Different Conceptions about the Meaning of Effort and Ability

There are two factors partially determining the outcome of an event. They are labeled "power" and "trying". These two factors are adapted by Weiner as a function of the perception of effort and ability. From the study about how people assign rewards and punishments to achievement-related outcome, Weiner described effort to be the "trying" component of behavior, while ability is the "can" component. They believed that effort is subject to volitional control but ability is non-volitional and relatively stable (Weiner, 1985).

Definitions of these two dimensions of attribution theory vary a little depending on the purpose of research. Lee (1987) assumed that effort is a function of the work involved in a response, whereas, Kahneman (1973) described effort as "the cognitive capacity available when a person is engaged in a task". Some researchers even cited the possibility that different cultures have different ideas about the meaning of effort and ability. The factors that emerged in the definition of ability by Japanese were primarily five: positive social competence, task efficiency, receptive social competence, originality, and writing. Upon analyzing these factors, it becomes obvious that the Japanese place greater emphasis on social competence as a component of intelligence than do Americans (Mizokawa & Ryckman, 1987; Duda & Allison, 1989). This kind of intelligence tends to be more controllable than problem-solving skills. It is useful to inquire whether there is further difference in beliefs about effort and ability between cultures (Holloway, 1988; Tam, 1993).

Regarding the concept of ability related to academic achievement, cultural beliefs were strongly reflected in the response of Americans, Japanese, and Chinese in a study performed by Stevenson, Lee, Stigler, and Chen (1990). American mothers emphasize innate abilities as a determinant of performance, but Chinese and Japanese mothers stress the impossibility of the child's realizing his or her full potential without strong and sustained effort. Moreover, Chinese and Japanese teachers hold that all children are capable of mastering the curriculum, while American teachers emphasize the importance of individual differences in innate abilities. American children perceive ability as having a stronger relation to the general self-concept than effort. Chinese children, however, conceive effort to be congruent with their perception about ability (Lee, 1987). A study examining different performance in mathematics between students in Hong Kong and Singapore (Lao, 2015) suggested that different academic outcomes in

mathematics at kindergarten between the two countries may be related to differences in curricula, and suggested the need to establish more explicitly what was expected of students in different years.

The belief that effort is the major avenue for improvement and fulfillment is pervasive in Asian cultures. Asian people view differences among individuals to be basically a result of life experiences rather than innate ability. Chinese children especially accept the philosophy that the major path to success is through effort, and they also incorporate their parents' beliefs about the importance of academic achievement (Stevenson, Lee, & Stigler, 1986; Han, 1996). Comparing Americans with Chinese, the former are more likely to believe that ability is innate, while the latter on the other hand, hold stronger beliefs that hard work is the major contributor to accomplishment and competence (Lee, 1987; Bond, Leung, & Wan, 1982).

2.3 Causal Attribution for Success or Failure

This discrepancy about the concept of ability and effort leads to different causal attributions as to the outcome of educational achievement among cultures. Chiu (1986) administered the Intellectual Achievement Responsibility (IAR) Questionnaire separately to Taiwanese and American students, and found that American children internalize success more than failure, while Chinese children assumed more personal responsibility for failure than for success in intellectual situations (Holloway & Hess, 1982). Recent work by Luo and Zhang (2015) studying variation in mathematics ability in Singapore kindergarten students found that the higher scoring students were the ones who were not afraid to ask for help, while those who felt that it would make them lose face and show lack of ability and so did not ask for help, tended to perform worse. The Chinese have a self-effacing mode of expression, tending to say that failure was due to their fault, while success was due to external luck. This contrasts with the western "self-serving" view of events, by which failure is seen as due to external forces and success to innate ability.

A group of researchers investigated cultural differences in causal ascription by mothers and children in relation to academic performance. By asking mothers and children from Taiwan, Japan and America to rank order factors which can be ascribed for outcomes of scholarly performance, researchers discover that Chinese and Japanese mothers favor effort as an explanation for achievement, whereas American mothers are the most positive about their

children's performance and the most likely to value ability over effort. Besides, the higher the Chinese children's level of performance, the stronger they believed in effort. Especially when compared with the other two countries, Chinese children had the strongest beliefs about the importance of effort (Stevenson, 1983; Holloway, Kashiwagi, Hess, & Azuma, 1986; Stevenson, Lee, & Stigler, 1986; Lee, 1987).

2.4 The Influence of Causal Attribution on Learning

Differences in causal perception lead to different aptitudes for learning. Students with an "ability" model would believe that people of high ability need not work hard to achieve and people of low ability will not achieve regardless of how hard they work. By contrast, students with an "effort" model such as the Chinese and Japanese would perceive learning as a gradual process and understand that success can be obtained by making effort. So the former treat errors as evidence of lack of ability and the prospect of a poor outcome, while the latter see obstacles as a natural part of learning (Stevenson, Lee, Stigler, & Chen, 1990; Bond, Leung, & Wan, 1982).

It is suggested that children would work harder if they believed that achievement depends on effort. Although attributing success to high ability may lead to positive self-evaluation and raise a child's confidence, attributing poor performance to low ability results in resignation and defeat. It is reasonable to explain the successful academic achievement of Asian students by their effort attributions for all performance, success as well as failure. American children, because they accept the concept that intelligence is fixed and that effort is negatively related to ability, do not like to invest too much time in studying. Consequently, the academic performance will suffer. The degree that effort contributes to Asian student's success in academic achievement is accepted by researchers (Mizokawa & Ryckman, 1987; Stevenson, Lee, Stigler, & Chen, 1990; Jagacinski & Nicholls, 1990).

Indeed, many theories claim that the causal ascription of success and failure will determine a person's expectations about his performance in the future. For instance, Gagne says that people who attribute their past failures to lack of effort are likely to try harder, whereas if those who attribute their failure to lack of ability tend to give up (Rodriguez, 1980). Dweck (1986) suggests that attributing failure to lack of effort rather than lack of ability leads students to improve their persistence and performance. According to Self-efficacy theory, students

attributing academic problems to low ability are prone to have a low sense of efficacy and don't try hard to succeed.

The belief about the relationship between effort and ability is also reported to influence patterns of learning. Children with the reasoning that effort and ability are inversely related are linked to having the helpless pattern (“I don’t have a talent for this subject”, “I’d be better doing something else”). On the contrary, children with a concept that effort would engender ability tend to own the mastery-oriented pattern (Gane, 1985; Lei, 2009). We assume effort to be controllable. Some students believe the more ability you have, the less you need to try. Students who fail after trying hard will say they have no ability and stop trying, whereas other students would intend to put more effort into the solution of a difficult task (Tam, 1993; Demo, & Savin-Williams, 1983).

3. Method

Instead of presenting students with a prearranged choice between effort and ability, we applied open ended questionnaires to collect the information about what these students themselves believed to have most effect on their exam results.

Poor performance is of multifactorial origin and a free response questionnaire is more likely to capture causes previously overlooked. Students attribute success and failure in academic achievement to a wide variety of internal and external causes, which need to be further explored. We avoided presenting students with our own a priori constructs. This gave opportunity for students to reflect and express their own conceptions and experiences. The intention was to avoid the temptation to limit causal attribution to limited factors chosen by the researchers. We presented three topics:

- How interested are you in this subject?
- How did the teacher perform?
- Why do you think you passed/ failed at this subject?

Our Subjects were students at a University in South Taiwan. They were aged between 18 and 20. At the end of the term we took 60 students from different courses, including Nursing, Pharmacology, Social Work, Human Resources. 30 had the highest scores in their exam, and 30 had failed with the lowest scores. All subjects were anonymous and encoded (F-S=Failed Student; S-S= Successful Students).

4. Results and Discussion

4.1 Results

We found that the successful students generally had a positive attitude toward teachers and were interested in the course, as expected, and devoted a great deal of time to the exam. The failures said they were not greatly interested, and also found the teacher did not inspire them. They did not spend much time on the course work because many of them had to work part time to afford to pay their fees. However, very few claimed lack of ability. Those that did so attributed their lack of ability to poor teaching, or claimed they were forced to do the course by their families. A few claimed the teaching styles were poor and did not arouse their interest or motivation.

F-S11: I have to work part time to pay my school fees, so don't have time to prepare
For the exam. (22 failed students made similar comments about part time.)

F-S26: The teachers are very boring and don't interest me. (19 failed students made
similar comments about the teaching method and style and lack of motivation.)

F-S13: The teacher wasn't very keen to help. When I asked her how to draw a table on
the computer, she told me to ask the computer course teacher. (4 failed students
claimed their teachers did not address the students' problems properly.)

F-S9: I was forced to do this course by my family. I really want to do a different course.
(4 failed students also commented they would rather be studying a different
subject.)

F-S4: In the English course, complained "I couldn't understand the teacher because she
spoke nothing but English in the class."

S-S24: I like the subject and like to discuss it with the teacher who is very enthusiastic
and helpful. (16 successful students made similar comments.)

S-S15: I visit the library regularly and spend a lot of time there after school. (22
successful students made similar comments.)

4.2 Discussion

Weiner's account of the discrepancy between Asian and American students' score in terms of their Asian cultural and family beliefs that success is due to effort rather than innate ability, is widely accepted (Kivilu & Rogers, 1998) However, Tam (1993) pointed out that it is

doubtful if Weiner's four specific causes of success and failure (effort, ability, luck, and difficulty of the exam) are representative of attributions made by the Chinese. These four causes contributed only half of the free attributions made by Chinese students. Our findings accord with Tam's suspicion that in Chinese culture effort is widely believed to be the cause not only of success but of failure. Weiner's four causes criticized for being oversimplified, for reducing the causation to two factors of interest which are presented to students having been selected a priori by the researchers (Tam, 1993).

Our research activity suggests that causal ascription is likely to be not binary but multifactorial. Many other dimensions for variation in success rate need to be explored. Among these are: social class variation expectations of parents and peer group, education's perceived relation to the social ladder, parental involvement, and the necessity of some students to do part time work to pay their fees (Ho, 1981).

We can change causal ascription through instruction and education. For example, teachers can kindle the thought that effort leads to improvement in ability by focusing on the importance of trying rather than evaluation. However, failure in one field may simply indicate the subject has not got a certain talent in that sphere, and may be more suited to direct his efforts in a more congenial field. It was suggested that teachers be trained to use positive attributions, so that students could associate success with hard work and self-improvement (Sukarivaha & Assaad, 2015). However, increased effort is already practised to stressful extremes in Chinese families, and further pressure could be counter-productive.

5. Conclusions

Causal ascription of academic failure or success may have more than the "effort versus innate ability" parameters. Our observations also suggest that students may have different views of their efforts at different times in their courses. We suggest that when a student feels he has lack of ability for a subject, he may not be requiring "attribution retraining" (Van Overwalle & De Mesenaere, 1990). In some cases the student might have a correct estimate of his ability, and benefit more from focussing on alternative subjects. Tam quotes students who claim "bad mood" and "inability to focus" as causes of failure. These moods are likely to be expressions of anxiety. Teachers may help such students by setting realistic expectations. "Poor teaching", whether true

or perceived, is an important additional factor in causal attribution, and deserves further study. Caution is required, because in some cases a student's evaluation of his own poor capacity could be correct. In such a case "remedial" teaching that he has the ability and all he needs to do is to make more effort in order to succeed, it could be frustrating and lead to further stress and anxiety.

Causal attributions should not be limited to effort and innate ability, but researchers should elicit individual students' perceptions. Their attributions suggest some partial explanations for the discrepancies in academic performance, but other influences (such as social class, parental involvement) should not be overlooked. This paper is intended to stimulate further discussion and researches in this field.

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