

The Effect of Suggestion on Tertiary Students' Attribution and Self- Concept

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Abstract

Although reattribution training has been shown to be very useful in improving learning, researchers disagree on what mediates the effects. As to the possible mediating factors, the prominent theories suggest factors such as expectations, notions of intelligence, self-efficacy or anxiety. However, this article proposes an alternative mediating theory, based on the analysis of actual attributions made by the students. The quantitative portion of the study revealed that suggestion, positive messages, functioned just like interventions used in reattribution training to improve the students' self-concept. The analysis of attribution showed that suggestion seemed to improve self-concept through changing attribution patterns. More specifically, suggestion was effective for some students by reducing internal attributions, which can have a negative impact on learning. On the other hand, suggestion did not function positively for students who had relatively serious learning difficulties. Rather than the factors proposed so far, this study showed the importance of self-concept as a mediating factor.

Introduction

This study originally investigated the effects of music, relaxation, and suggestion on foreign language learning as well as three major affective factors, motivation, anxiety, and self-concept (Shimbo, in press). To complement the quantitative data, qualitative data was collected at the same time. Although it was not initially expected, the result of the quantitative part of the study revealed that suggestion functioned to enhance self-concept in a similar way to interventions used in reattribution training. It was, then, decided to use the qualitative data to investigate attributions made by students.

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It is assumed that the causes to which one attributes to one's successes and failures will influence subsequent emotional and cognitive behaviour (Weiner, 1985; Pintrich & Schunk, 2002). Through changing an individual pattern of attribution, reattribution training aims to reduce negative reactions such as lack of motivation and a perceived state of learned helplessness. Although various types of reattribution training have been revealed to be beneficial for students (Försterling, 1985), researchers disagree on what mediates the effects. Consequently, they limit the effectiveness of interventions as they are not able to focus directly on the internal mediating process involved (Craven *et al.*, 1991). While admitting the lack of evidence to date, Wilson, Damiani, and Shelton (2002) discerned the following four prominent theories on possible mediating factors:

1. The key is to get people to attribute past failures to unstable causes such as low effort or bad luck, so that they expect to do better in future (Weiner, 1986). Increasing people's expectations would lead to increased effort and actual improvements (Menec *et al.*, 1994).
2. Dweck (1999; 2002) argues that the key is to change people's self-theories about intelligence rather than specific attributions. She emphasised the importance of praising students' efforts and developing strategies to encourage a view that their intelligence is changeable in order to create the motivated achievers.
3. Bandura (1993; 1995) states that to change people's self-efficacy is crucial. Self-efficacy is people's belief about the likelihood that they can perform a desired behaviour. People who attribute success to internal stable factors such as ability will experience greater self-efficacy than people who attribute their success to external unstable factors.
4. Wilson *et al.* (2002) suggest that the key is a reduction in the anxiety produced by pejorative attributions. By changing people's attributions from pejorative to non-pejorative, people avoid the self-blame that follows a pejorative attribution, thereby avoiding further increases in anxiety and poor performance.

The aim of this study is to propose an alternative mediating process for reattribution training, emphasising the role of self-concept. The investigation focuses on the influences of suggestion on self-concept and actual attributions.

Method*Participants*

The participants in this study were 54 undergraduate students who were enrolled in an introductory Japanese course in Australia. The students met once a week for a two-hour session. The two pre-existing classes were randomly allocated to either an experimental (N = 25) or a control group (N = 29). Distribution figures for gender, average age, non-native English speakers and overseas students are shown in Table 1. One of the overseas students was from a Pacific island and all the others were from Asian countries. Forty two students (78 per cent) had completed 24-hour introductory Japanese course in the previous semester and the others had studied Japanese for not more than 5 years.

Table 1***Breakdown of participants in experimental and control groups***

	Experimental group	Control group
Gender		
Male	13	11
Female	12	18
Average age	22.0	21.1
Language spoken		
Native English speakers	3	3
Non-native English speakers	22	26
Type of students		
Local students	5	5
Overseas students	20	24

Quantitative portion of the study

The experiment lasted for 12 weeks, broken into 3 stages of 4 weeks each. The experimental class was taught using communicative language teaching (CLT) methods in conjunction with three interventions. Music was implemented at stage 1, music and relaxation at stage 2, and music, relaxation and suggestion at stage 3. The control class was taught by CLT methods with no suggestion, music or relaxation (Table 2).

Table 2
Design of the study

	Stage 1	Stage 2	Stage 3
Control Group	C	C	C
Experimental Group	C + M	C + M + R	C + M + R + S

Note. C = Communicative language teaching methods, M = Music, R = Relaxation, S = Suggestion

During the music intervention, background music ('Water Music' by Handel, G.F). was played at all the times during the class, using a tape recorder. For relaxation, Progressive Muscular Relaxation exercises (Davis *et al.* 1995) were implemented for 5 minutes at the beginning of each lesson. For the suggestion treatment, at least one direct verbal suggestion, general positive message (e.g. "learning will be easy for you today", Schuster & Gritton, 1986), was used during each lesson. A checklist revealed that suggestion was made at least three times at each class.

The major finding of the quantitative study was that General Self-Concept (GSC) scale in Self Description Questionnaire (Marsh & O'Neill, 1984) increased significantly in the experimental group at stage 3 ($t = -2.939$, $p < .01$). Although GSC also increased in the control group at stage 3, the change was not significant. While music and relaxation did not have any obvious effects, suggestion was found to improve GSC, which is defined as "student self-perceptions of themselves as effective, capable individuals who have self-confidence and self-respect and are proud and satisfied with the way they are" (Marsh & O'Neill, 1984). Therefore, it was decided to examine the qualitative data at stage 3 to determine what effect did suggestion have on the students' feedback.

Data collection

All participants were asked to fill in a short questionnaire voluntarily at the end of every lesson during the 12-week experiment. The feedback sheet contained date, name, student number as well as responses to the following four questions:

1. Was today's lesson helpful?
2. How did you feel during this lesson?

3. Do you have any questions or things you did not understand?
4. Do you have any other comments or messages for the lecturer?

Data analysis

The total number of the feedback sheets collected was over 600. Each sheet was given a four-digit number with the first two digits representing the number of the session and the latter two representing the students' number. The experimental group consists of the students No. 02 to 26 and the control group consists of No. 27 to 55. For example, the sheet 0524 represents the feedback written by the student number 24 at the fifth session. Twelve sheets that contained no content were eliminated from the data. The rest of the sheets were divided into 990 segments. Each segment was from one word to a paragraph containing several sentences.

All of the segments containing information on the perceived cause of an event were selected and categorised according to three dimensions specified by Weiner (1992): locus (whether location of the cause is internal or external), stability (whether the cause stays the same or can change), and responsibility (whether the students can control the cause or not). In addition, globality (Abramson *et al.* 1989; Klein, 1996) was considered in some cases. The global-specific dimension treats whether the cause of the outcome of a certain task relates only to a specific task or to a range of events. The focus of this study is only on the negative feedback, because the positive feedback consisted of generally very simple emotions that did not involve the cognitive process of making attributions. Weiner (1986) distinguished such affects from attributions-linked affects and termed them as "outcome-dependent affects". Elicitation of these affects depends on attainment or non-attainment of a goal and not on the cause of those outcomes. Regarding negative attributions, Weiner (1979) specified four typical types: Bad Luck (unstable-external), Insufficient Effort (unstable-internal), Difficult Task (stable-external) and Low Ability (stable-internal). Each attribution has different affective reactions and motivational impact as shown in Table 3.

Table 3
Effects of negative attribution (McInerney & McInerney, 1998; Weiner, 1994)

Type of Attribution	Affective Reactions	Motivational Impact
Bad Luck (unstable-external-uncontrollable)	Disappointment, annoyance, little shame	Possible change in future, but not highly motivated.
Insufficient Effort (unstable-internal-controllable)	Disappointment, regret, guilt, some shame	Expectation of possible change in future performance with increased effort. Possible increase in achievement behaviour.
Difficult Task (stable-external-uncontrollable)	Disappointment, little shame, possible frustration	Withdrawal from task with expectations of similar performance outcome in future.
Low Ability (stable-internal-controllable)	Disappointment, increased shame, anxiety, embarrassment	Avoidance of task in future with expectations of similar performance outcomes.

Results

All the subjects except those with missing data were divided into the following four groups depending on whether their GSC increased or not at stage 3: the increased experimental group ($N = 16$), the decreased experimental group ($N = 5$), the increased control group ($N = 14$), and the decreased control group ($N = 12$). The negative segments were revisited 6 months later to ensure that each category was externally distinct and internally consistent (Tables 4, 5, 6, & 7).

Table 4
Attributions of the 16 subjects in the experimental group, whose GSC increased at stage 3

Type of attribution	Stage 1	Stage 2	Stage 3
In/Ust/Ct	0224,0308,0303, 0206,0215,0323,0423	0503, 0509, 0512, 0609,0705,0524, 0607,0618,0815	(0912)(0907)
In/Ust/Uct	0124, 0314, 0418	0626	
Ext/Ust/Ct		0811	
Ext/Ust/Uct		0605, 0614, 0623	0924,1008, 1015,1021
Ext/St/Uct	0212,0224, 0304, 0309, 0315, 0312, 0315, 0415	0508, 0513, 0603, 0811, 0812, 0615, 0718	0903, 1009,1012, 1205, 1208,1212, 0918,1010

Note. In = internal attributions, Ext = external attributions, Ust = unstable attributions, St = stable attributions, Ct = controllable attributions, Uct = uncontrollable attributions.

Table 5
Attributions of the 5 subjects in the experimental group, whose GSC decreased at stage 3

Type of attribution	Stage 1	Stage 2	Stage 3
In/Ust/Uct		0720, 0525	
In/St/Uct		0502	
Ext/Ust/Uct	0222,0220,0422	0522,0602,0704	0902,0904,0920, 1002, 1004,1022
Ext/St/Uct	0202,0204,0402,0422	0504,0620	1102

Note. As Table 4.

Table 6
Attributions of the 14 subjects in the control group, whose GSC increased at stage 3

Type of attribution	Stage 1	Stage 2	Stage 3
In/Ust/Ct	0334, 0341, 0345	0544, 0644, 0834	0930, 1053, 1245, 1253
In/Ust/Uct	0228, 0241	0528, 0538, 0548, 0551, 0630, 0645, 0651, 0728, 0730	0951, 1228
In/St/Ct	0255	0537	
Ex/Ust/Uct	0234, 0244, 0251, 0434, 0442, 0444	0533, 0545, 0551, 0633, 0634, 0641, 0642, 0644, 0645, 0648, 0651, 0653, 0855	0933, 0945, 0953, 1033, 1034, 1042, 1048, 1051, 1242
Ex/St/Uct	0245, 0251	0534, 0537, 0628, 0844	0941, 1041

Note. As Table 4.

Table 7
Attributions of the 12 subjects in the control group, whose GSC decreased at stage 3

Type of attribution	Stage 1	Stage 2	Stage 3
In/Ust/Ct	0327, 0332, 0431		
In/Ust/Uct	0427	0536, 0627, 0729, 0749, 0836	1027, 1036, 1039, 1143
In/St/Uct	0239, 0446, 0429		
Ex/Ust/Uct	0229, 0231, 0232, 0243, 0249, 0250, 0329, 0432, 0437, 0443, 0446	0631, 0632, 0636, 0637, 0643, 0649, 0650, 0652	0931, 0936, 0937, 0952, 1036, 1052
Ex/St/Uct	0249, 0343, 0352, 0437	0627, 0643, 0652	0939, 1052, 1243

Note. Table 4.

The control groups

The most noticeable change between stages 2 and 3 in the increased group was found in internal-unstable-uncontrollable attributions (Table 6). They reduced from 9 to 2, whereas the occurrence of this type of attribution remained almost the same in the decreased group (Table 7).

It is also noticed that internal-unstable-controllable attributions increased from 3 to 4 in the increased group, but this type of attribution was not found at stage 2 and 3 in the decreased group (Table 6 & 7).

These results suggest that there is a relationship between attribution patterns and self-concept. Specifically, it seems that making internal-unstable-controllable attributions and reducing internal-unstable-uncontrollable attributions is related positively to GSC. It is reasonable to assume that ascribing learning difficulties to controllable causes would contribute to the enhancement of self-concept and that making uncontrollable attributions would result in the reverse.

The increased experimental group

Three distinctive features emerged in this group (Table 4). First, the internal attributions were mostly internal-unstable-controllable in nature, as seen in the following examples, and dysfunctional attributions such as internal-stable-global were not found.

0618: Bad exam performance. Didn't prepare well.

0609: Find it very hard to talk to in Japanese especially in long sentence.

This result shows that the subjects in the increased group were making relatively less problematic attributions prior to the introduction of suggestion. This could be a prerequisite condition for suggestion to function positively. That is, as long as the students perceived the causes for their difficulties as internal-unstable-controllable (e.g., skills, efforts and knowledge), or internal-unstable-uncontrollable (e.g., tiredness), suggestion may work to improve their self-concept.

Secondly, internal attributions almost disappeared with the introduction of suggestion at stage 3. Although there were a couple of internal attributions at stage 3 (0907 and 0912), closer examination revealed that they were not typical internal attributions.

0907: Neutral, not well prepared in tests but quite confident. Anyway will try hard next time.

The subject perceived his state as "neutral" rather than giving a typical negative reaction, for example, regret, as a result of internal-unstable-controllable attribution. Although he was aware of his insufficient effort in preparation for the exam, he was still confident in his performance. In this sense segment 0907 should be regarded as an exceptional example of internal attribution.

0912: Particle is still little confusing.

It is not clear whether this "confusing" event was attributed to internal or external factor. Indeed, her use of "still" suggests this could be regarding her own unstable state rather than a stable state of knowledge (an internal-unstable-controllable attribution). However, it can be also interpreted simply as an expression of difficulty for the particular grammar item to learn (an external-unstable-controllable attribution). The latter seems to be more likely in this case.

Therefore, suggestion may have worked to reduce internal attributions. This decrease in internal attributions may be related to the improvement of GSC. This assumption seems to be given further weight given that a comparison of this group to the other groups showed that the change in attributional patterns was unique to this group. In particular, while internal-unstable-uncontrollable attributions decreased in the increased control group, internal-unstable-controllable attributions decreased in the increased experimental group (Tables 4 & 6). It is likely that the increases in GSC in these two groups were mediated differently and that suggestion functioned to reduce the internal-unstable-controllable attributions, the least problematic type of attribution.

Thirdly, no obvious changes were found between stages 2 and 3 in the external attributions in terms of frequency. However, it was noted that 5 out of 8 students who made internal-unstable-controllable attributions at stage 2 made external-stable-uncontrollable attribution at stage 3. This finding seems to suggest that suggestion enhances self-concept by changing attribution patterns. This possibility will be considered after examining other findings.

It should also be noted from Table 4 that this group made a relatively large number of external-stable-uncontrollable attributions at all stages, compared to the other three. This type of attribution can have both positive and negative affective reactions. Making external attributions is known to protect self-esteem or pride on the one hand, while stable attributions for negative events are linked to hopelessness or fear (Weiner, 1986; Marsh, 1986).

The increase of GSC at stage 3 in this group may have been partly due to the positive effect of making external attributions. It has to be noted, however, that if external-stable and external-unstable attributions are considered together, the proportion of all external attributions is about the same for all four groups (Tables 4, 5, 6, & 7).

Therefore, the positive effects of making external attributions such as an increase in affective variables should be expected not only in this group but also in the other three groups. This was not the case.

On the other hand, despite that fact this increased experimental group made a large number of stable attributions for negative events, GSC increased at stage 3.

This result can be interpreted at least in two ways. First, GSC may not be strongly affected by, or may even be irrelevant to the negative affective consequences of making external-stable-uncontrollable attributions. Second, suggestion may have functioned to mitigate the negative effects of making dysfunctional attributions. The current data alone cannot determine the relationship between suggestion and the external attributions.

The decreased experimental group

This group made no internal attributions at stage 3. It is interesting to note that this phenomenon was also observed in the increased experimental group at this stage (Tables 4 & 5).

The lack of internal attributions suggests that suggestion may have worked to reduce internal attributions. Nevertheless, GSC decreased at stage 3 in the decreased experimental group. Therefore, reducing internal attributions may not be directly and solely related to the increase of GSC. The three internal attributions at stage 2 were further investigated to see whether any qualitative differences existed between the increased group and this group.

0720: A bit lost. Somehow I don't know what I'm learning.

Although it is difficult to judge whether this segment is stable or unstable, it would be natural to interpret this as a rare and, therefore, unstable event. In fact this student did not express a similar reaction to any other classes. However, this could be a more serious difficulty than those expressed in the increased experimental group, in the sense that the nature of the difficulty is not specific and the student seems to have lost control over his learning. This segment can be categorised as internal-unstable-global-uncontrollable attribution.

0502: The class today is interesting. But I feel quite difficult to follow the lesson today. Because I feel very difficult to listen Japanese language. If the person speaks slowly, I can understand but faster, I

don't understand, I just can hear a little bit (stable-global-uncontrollable).

This is similar to 0609 in the increased group. While the subject 09 perceived the task of speaking Japanese in long sentences to be very hard, this student seems to emphasise the impossibility of listening to "fast" Japanese. Subject 09 could avoid using long sentences and use short sentences instead. But the subject 02 does not have such control over her difficulties, which could happen at any time. Although she obviously perceived the difficulty as stable, it is not very clear whether she perceived it as global or specific. Listening to "fast" Japanese was the kind of task she experienced in every class, whereas speaking Japanese in long sentence was a rather rare task in this course. In that sense, the difficulty expressed in 0502 was more global than that in 0609. Apparently subject 02 perceived her internal difficulty as something she was unable to overcome. Then, the cause could be perceived as something like aptitude (stable-uncontrollable) rather than an effort type (unstable-controllable). The external factors, the tutor in particular, could cause such difficulties at any time and she would not have any control over them.

People who attribute negative events to internal-stable-global causes are known to experience learned helplessness, which is characterized by depression, lower effort, and difficulty in learning (Abramson *et al.*, 1989; Wilson *et al.*, 2002). The type of attribution made in 0502 can be said to be more serious than any of the attributions observed in the increased group.

0525: I felt good today. It was fun but I kept getting confused between left and right (stable/unstable-uncontrollable-specific).

It is again difficult to judge whether this specific difficulty was perceived as stable or unstable. However, the context of 0525 is positive overall and the difficult experience seems to be perceived as a minor event. It is true that this experience is regarding his ability and it is somehow perceived as uncontrollable just like the other two segments in the decreased group. However, it does not seem to be as serious a problem in terms of degree of difficulty. Considering that the subject 25 scored relatively high in GSC and decreased only 1 point at stage 3, he might not be a typical sample of the decreased group.¹

It was found that prior to implementing suggestion, 3 out of 5 subjects in the decreased group were making generally more serious types of internal attributions than the increased group. This suggests

that suggestion may work to reduce internal attributions but may not function to increase self-concept for those who have made dysfunctional internal attributions.

It is necessary to look into the attributions made by the other 2 subjects to see whether the same feature can be found. Subject 4 decreased most (-11 points) in GSC at stage 3 in the experimental group. Distinctive feedback was recorded in 1004.

1004: Lost all the confidants because get's the result back [*sic*]. Easy to understand, but too much work, because is final year [*sic*]. Wish is not going to fail.

Subject 4 attributed his worse than expected results largely to an external-stable factor, i.e. other academic engagements. In terms of locus of control, however, he viewed the cause of this negative event as both controllable (easy to understand) and uncontrollable (his situation as a final year student). Although his attribution does not quite fit any one of the four typical attributional styles (Table 3), his attribution can be classified as external-stable-uncontrollable. While admitting his effort was insufficient, he still justified his situation as an inevitable consequence of the external conditions. His response ("wish is not going to fail") seems to be a typical example of self-protective behaviours (Woolfolk, 1998). Despite such protective attitudes, his GSC decreased most. Further, he seemed to have withdrawn from learning tasks as his feedback at the last lesson suggests.

1204: Boredom, because of exams.

He may be experiencing apathy, a symptom of helplessness to some extent. It can be said that the subject 4 was experiencing relatively more serious difficulties.

As to subject 22, it revealed that all of his attributions are external-uncontrollable (Table 5). Their causes are the speed of the lesson (0422, 0522) and the quantity of the course (0222, 1022).

0522: Confuse. Still confuse in speaking direction. Could the lesson move slower, quite hard to catch up.

1022: Stress, more and more stuff to memorise.

Controllability has been made much of in the search for an understanding of learned helplessness. Attribution of failures to uncontrollable factors is considered to be dysfunctional because it results in helplessness (Weiner, 1986). When one is helpless, both anxiety and hopelessness are experienced. It is also suggested that

anxiety typically precedes depression and that hopelessness is only one cause of depression (Klein, 1996).

In fact, subject 22 made negative comments constantly during the course and most of them revealed his anxiety. Although the attributions for these negative experiences were not clearly indicated, they suggest that he was constantly having difficulty in keeping up with the course requirements. Especially during the stage 3, he expressed anxiety in 3 lessons and stress in 1 lesson, experiencing negative feelings in every lesson.

1222. Anxiety, last test. Innovative and interesting lesson.

Studies have shown the negative correlation of anxiety with grades in language courses, with self-confidence in language learning, and with self-esteem (Onwuegbuzie *et al.*, 1999; Oxford, 1999). MacIntyre and Gardner (1991) further suggested that as a result of repeated occurrences of state anxiety, foreign language anxiety becomes a trait rather than a state. Constant complaints and expressions of anxiety as well as his poor performance suggest that subject 22 may have experienced trait anxiety rather than state anxiety.² Once language anxiety has evolved into a lasting trait, it can have a pervasive effect on language learning and language performance (Oxford, 1999). The student experiences a negative cycle of cognitive and affective deficits (MacIntyre & Gardner, 1991). Subject 22, therefore, seems to be similar to the other four students in the decreased experimental group in that he was also having relatively more negative learning experiences.

The fact that suggestion did not function to improve GSC for this group seems to indicate that there are limitations to the effectiveness of suggestion. It can be proposed that suggestion may not benefit those who experience relatively more serious difficulties in foreign language learning.

In summary, those who increased their self-concept were found to have been making less dysfunctional types of attribution such as internal-controllable or showing smaller number of uncontrollable attributions. On the other hand, suggestion did not produce a positive effect for those who make internal-uncontrollable attributions and for low achievers. It is plausible that suggestion can only hinder the students' internal attributions and help improve their GSC as long as they attribute their difficult experiences to internal-controllable factors such as efforts and skills.

Conclusion

Given that teacher's feedback is perceived differently depending on students' cultural backgrounds (Salili *et al.*, 1989) and that over 90 per cent of the participants in this study had Asian cultural backgrounds, the results of this study can only be generalized to students with similar backgrounds.

Another limitation lies in the fact that students generally did not spend much time filling in the sheets, and the writing competence of some students was rather limited. As a result, their feedback tended to be short. In addition, the students were aware that the instructor as the researcher was able to identify their feedback easily. Nevertheless, the feedback seemed to be generally honest and direct, including even some criticisms of the instructor, and faithfully represented the students' affective states at the time.

It also has to be noted that unlike many other studies on attributional retraining, this study did not use an attributional questionnaire that dealt with imaginary attributions but investigated real attributions. Although this is one of advantages of this study, it is also a disadvantage in terms of the content validity that is generally common to content analysis (Fraenkel & Wallen, 2006). Therefore, it is not easy to compare the findings of this study with other studies.

Nonetheless, this study revealed that suggestion can be effective in enhancing students' self-concept, and that this positive effect is related to changes in attribution patterns. These results support the general finding that self-concept is related to attribution (Marsh *et al.*, 1984; Weiner, 1986). They also indicate that suggestion can be an effective intervention in attributional retraining. Further, this study suggests that self-concept is an important mediating factor in attributional retraining, as opposed to other factors suggested by Wilson *et al.* (2002).

Although the current data do not provide a comprehensive explanation of the internal mediation process involved in the function of suggestion in attributional retraining, a couple of hypotheses can be posed based on the results. First, it is plausible that suggestion might enhance students' self-concept by reducing negative internal attributions. In the experimental group no internal attributions were observed when suggestion was implemented, whereas in the control group this was not the case. It was also found that among the experimental group only subjects making less dysfunctional attributions increased their self-concept.

The findings suggest that positive messages may have helped the students stop blaming themselves for difficult experiences in their learning. Consequently, the reduction of internal attributions led to an increase in their self-concept. This process can be explained as a kind of self-serving strategy (Covington & Omelich, 1985; Craven *et al.*, 1991; Marsh, 1986; Marsh *et al.*, 1984). Individuals may protect their self-concept by taking credit for success and denying blame for failure. This interpretation indicates that simply receiving positive messages and reducing internal attributions is effective enough for some students to enhance their self-concept without changing dysfunctional attributions to functional attributions.

Suggestion may also be effective in changing attributional patterns, and thereby, enhance self-concept. The results showed that many of the students whose self-concept increased at stage 3 ceased making internal-unstable-controllable attributions and made external-stable-uncontrollable attributions instead (Table 4). This hypothesis suggests that suggestion could function in a similar way to the manipulation techniques such as persuasion used in attributional retraining programs (Försterling, 1985). Suggestion might function to change the students' dysfunctional attributions to functional attributions. This would allow the students to avoid the negative affective consequences that follow from dysfunctional attributions and enjoy the positive flow-on from functional ones. As mentioned, however, making external attributions itself does not seem to be strongly related to an increase in self-concept. Therefore, the first hypothesis seems to be more plausible.

The above discussion indicates that suggestion could be used more effectively as an intervention to enhance affective factors in learning. Suggestions that discourage internal attribution for negative experiences would most likely be more effective than the general positive messages used in this study. Further research is necessary to test this hypothesis.

Although this study showed that suggestion can enhance self-concept, there are certain factors which should be taken into account. First, it should be noted that there is a limitation in the effectiveness of suggestion. The finding that suggestion functioned positively for only some students is consistent with previous research on attributional retraining (Menec *et al.*, 1994; Perry & Penner, 1990; Wilson & Linville, 1985). Interestingly, this study, as well as one by Menec *et al.* (1994), suggests that students who make internal-uncontrollable attributions do not benefit from intervention. Menec *et al.* (1994) proposed that

intervention has an impact only to the extent that it provides new information. It is probable that in this study positive messages might not have been as convincing for students who have relatively more serious learning problems.

Secondly, it is important to note a warning by Försterling (1986), who made the comment that many reattributional programs teach causal cognitions that lead to good behaviours and emotions, rather than the true causes for their successes and failures. Some students would be better served with a more individualized practical intervention including effective strategies training rather than reattribution training.

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NOTES

1. The score of subject 25 in GSC at stage 3 was 84. The mean of this subscale in the experimental group was 71.00 ($SD = 13.66$).
2. Quantitative analysis does suggest that subject 22 was one of the typical low-achieving students. In particular, his score for the total of oral tests, 19.5, was the third lowest ($M = 24.9$, $SD = 4.7$), and his score of 2 in the listening test was the lowest in the experimental group ($M = 7.4$, $SD = 3.2$).