Available online at www.sciencedirect.com
ScienceDirect
System 37 (2009) 46–56
SYSTEM
www.elsevier.com/locate/system

Metacognitive beliefs and strategies in learning Chinese as a foreign language

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Received 18 December 2007; received in revised form 6 May 2008; accepted 14 May 2008

Abstract

The study investigates the effects of second-year university students' metacognitive beliefs and strategies on learning Chinese as a Foreign Language (CFL). The analysis shows that metacognitive beliefs, which identify students who are confident about their ability to learn a foreign language, are positively associated with students' CFL achievement results. Successful students are found to have confidence in their abilities.

Metacognitive strategies also influence students' CFL achievement results. Students who show self-regulation by monitoring their progress, persevering at tasks and setting realistic goals are more successful. These are strategies that are essential for learners who wish to assume responsibility for their language learning.

The study confirms Shen's (Shen, H.H., 2005. An investigation of Chinese character learning strategies among non-native speakers of Chinese. System, 33, 49–68) conclusion that students should be encouraged to analyse their own learning processes in order to improve their metacognitive learning strategies, which will reinforce motivational aspects of self-efficacy.

The pedagogical implications of the study are that teachers can help students to think about what happens during the CFL learning process and identify effective strategies, leading to improved language learning and higher levels of self-esteem and confidence.

Keywords: Metacognitive knowledge; Metacognitive beliefs; Metacognitive strategies; Chinese as a foreign language; Chinese characters

1. Introduction

Research on metacognition (Anderson, 2002; Marzano et al., 1988), metacognitive beliefs (Cotterall, 1999; Flavell, 1979; Graham, 2003; Wenden, 1999) and metacognitive strategies (Hsiao and Oxford, 2002; Rasekh

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doi:10.1016/j.system.2008.05.001

and Ranjbary, 2003; Tseng et al., 2006; Yang, 1999), is increasingly concerned with how they affect learning, and substantial evidence has now accumulated on the roles of metacognitive beliefs and strategies in learning a second language (Pintrich and de Groot, 1990; Pintrich et al., 1993; Rasekh and Ranjbary, 2003; Schunk and Zimmerman, 1994; Zimmerman, 2000;). Sinclair (2000) suggested that without an explicit and conscious awareness of the process involved in learning a language, learners will not be in a position to make informed decisions about their own learning and that such awareness involves "a high degree of experienced choice with respect to the initiation and regulation of one's own behaviour" (p. 9).

As "thinking about thinking" (Anderson, 2002; Flavell, 1979), metacognition consists of an understanding or perception of the ways different factors act and interact to affect learning. It is the knowledge that learners possess about cognitive processes and how they function. As a psychological construct and a dimension of thinking, metacognition has several virtues (Marzano et al., 1988): it focuses on the role of awareness and executive management of thinking, and helps learners become active participants in the learning process, instead of passive recipients of instruction and imposed experiences. It emphasizes personal appraisal and management, oriented towards cognitive development and learning (Paris and Winograd, 1990), and is embedded in cognitive development, functioning as both product and producer. It is amenable to classroom instruction with teachers encouraging metacognitive dialogues and promoting self-appraisal and self-management skills (Paris et al., 1991). A further virtue is that self-appraisal and self-management invite both cognitive and motivational explanations as "skill and will" are interwoven in reflections and anticipations about learning (Paris et al., 1985).

2. Review of the literature

2.1. Metacognitive beliefs

Associated with self-appraisal and self-management, metacognitive beliefs are expectations that learners hold with regard to thinking and learning (Paris and Winograd, 1990), and the information learners acquire about their learning (Wenden, 1999). Learners need to believe in the purpose of their own learning and develop positive expectations for their performance, and value success. Goal oriented as it is, learning might be undermined by a number of undesirable goals. To avoid this, learners need to develop their belief in control, acknowledging that their actions are responsible for successful performance and that failure is a normal part of learning, which may be used to shape future efforts (Clifford, 1984). If they are not aware of this, passive or negative attitudes toward learning may arise (Johnston and Winograd, 1985), and as a result, students may develop beliefs about their inability to use effective strategies.

Metacognitive beliefs may be viewed as rationalizations or coping responses. For example, learners can select challenging tasks and persevere with them, when they believe that they can accomplish the tasks with reasonable effort (Bandura, 1982; Schunk, 1984). Metacognitive beliefs also include learners' perceptions of self-efficacy and self-control.

Metacognitive belief can be put into three categories: person knowledge, task knowledge, and strategy knowledge (Wenden, 1991). Person knowledge refers to general knowledge about how human beings learn and process information, and individual knowledge of one's own learning processes. Learners need to understand their own cognitive capabilities, and to know in which particular areas they are generally competent and skilful. They need to know how to compensate for deficiencies. Task knowledge includes knowledge about the nature of the task and the type of processing demands. Learners need to know the purpose and the nature of the tasks. Strategy knowledge includes knowledge about both cognitive and metacognitive strategies and conditional knowledge about when and where it is appropriate to use strategies. It can lead learners to select, evaluate and revise cognitive tasks, goals, and strategies in the light of their relationships with one another and with their abilities and interests (Flavell, 1979). Learners may deliberately call upon their metacognitive knowledge when the learning task is new and incomplete (Wenden, 1999).

Learners need to understand the relationship between learner strategies and learning outcomes, and to recognize the cognitive utility of such strategies. Learners with negative attitudes towards the usefulness of strategies are prone to maladaptive beliefs, which are likely to thwart achievement. On the whole, learners' metacognitive beliefs mirror their view of themselves as intentional, self-directed, and self-critical learners.

Wenden (1986) applied metacognition to foreign language learning and suggested that learners have explicit beliefs about how to learn a second language, and these influence the way they approach language learning. She identified twelve explicit and prescriptive beliefs of advanced learners, revealing that learner's beliefs about language learning are consistent with their approaches to learning. Young (1991) also noted that successful learners develop insightful beliefs about the language learning process, their own abilities and the use of effective learning strategies for facilitating the learning process. Unwitting or uninformed beliefs about language learning may lead to dependence on less effective strategies, resulting in indifference toward learning, poor cognitive performance, classroom anxiety and negative attitudes to autonomy (Gardner and Miller, 1999). From this perspective, learners' beliefs are crucial to the development of learner autonomy.

2.2. Metacognitive strategies

Metacognitive strategies are executive skills that evaluate the success of a learning activity (O'Maley and Chamot, 1990). The basic metacognitive strategies include connecting new information to old, selecting deliberate thinking strategies, planning, monitoring, and evaluating thinking processes (Dirkes, 1985). The emphasis is on reflection on learning processes and learning to learn, leading to enhanced self-direction and learner autonomy in language learning (Cohen, 1998; Hedge, 2000; Wenden, 1991; Williams and Burden, 1997). Through the skills of planning, monitoring and evaluating, learners manage, direct, regulate and guide their learning. Metacognitive strategies are sequential processes to control cognitive activities and to ensure that a cognitive goal is achieved. They help to regulate and oversee learning activities, such as taking conscious control of learning, planning and selecting strategies, monitoring the process of learning, correcting errors, analysing the effectiveness of learning strategies, and changing learning behaviours and strategies when necessary (Ridley et al., 1992). Graham (1997) believes that metacognitive strategies that allow students to plan, control and evaluate their learning have the most central role to play in improvement of learning and that students without metacognitive approaches are essentially learners without direction.

Connecting language learners' beliefs with their learning strategy use, Yang (1999) conducted a study of learning English as a foreign language. In this study, the metacognitive strategies include: finding out a better way to learn English, monitoring the learning process for errors, reviewing English lessons frequently, setting goals for improving English, and planning schedules for English study. The study results show that students' self-efficacy beliefs about learning English were strongly related to their use of all types of learning strategies and suggested that language instruction as well as strategy training programs should attend to students' beliefs about second language learning, including both metacognitive and motivational beliefs.

The use of metacognitive strategies ignites one's thinking and can lead to higher learning and better performance, according to Anderson (2002). Individuals need to regulate their thoughts about the strategy they are using and adjust it according to the situation. Students need to assume increasing responsibility for planning and regulating their learning. Obviously, it is difficult for learners to become self-directed when learning is planned and monitored by someone else, and therefore, students can be taught to make plans for learning activities including estimating time requirements, organizing materials, and scheduling procedures necessary to complete an activity.

Placing a strong emphasis on EFL students' metacognitive knowledge of oral strategies, Zhang and Goh (2006) investigated Singaporean students' metacognitive strategies, finding that while the students were generally aware of the usefulness of the strategies, they were not conscious and confident strategy users, indicating a need to increase their repertoire of strategies.

Anderson (2003) also demonstrated that metacognitive strategies raised L2 performance in reading comprehension. Similar results were found by Rasekh and Ranjbary's (2003) study with the metacognitive strategies training group outperforming the comparison group on a vocabulary achievement test showing that explicit metacognitive strategy training contributes to the improvement of students' vocabulary learning. These researches have shown that explicit metacognitive strategy instruction has a positive impact on the language development of EFL students.

Although there has been growing interest in application of metacognition to the study of L2 learners (Chamot, 2005; Sinclair, 2000; Zhang, 2001) due to the fact that learner autonomy presupposes a high degree of metacognitive awareness, yet, to date, most research into metacognitive beliefs and strategies involving cog-

nitive processes in learning has been applied to alphabetical languages, and not, with only very few exceptions, to other languages using characters such as in Chinese (e.g. McBride-Chang and Chang, 1995). The present study explores the metacognitive beliefs and strategies of tertiary-level students of Chinese as a Foreign Language (CFL).

The primary objective of the study is to determine the metacognitive beliefs and strategies CFL students hold and use, and the nature of the relationship between these beliefs and strategies and CFL achievement scores. In particular, the study considers students' perceptions of their performance in CFL and how this is related to their achievement.

3. Method

3.1. Participants

Forty-five English-speaking students in Chinese classes at beginners' level at the University of Nottingham were involved in the study. There were twenty-four female students and twenty-one male students. The youngest was eighteen and oldest was twenty-one, and their average age was 19.2. None of them had learned Chinese before.

3.2. Materials and procedure

A questionnaire, in three parts, on CFL learning was developed. Part One, dealing with strategies for learning Chinese characters, was adapted from Shen (2005), and has twenty-six statements. Part Two, assessing students' metacognitive knowledge/beliefs, is made up of seventeen statements, and was derived from Pintrich and de Groot (1990). Part Three, consisting of twenty-four statements, deals with metacognitive strategies used by CFL students, and was adapted from Graham (1997) and Wang (2008). There are sixty-seven statements altogether in the questionnaire. All the answers were rated on a seven-point Likert scale, ranged from strongly disagree (1) to strongly agree (7).

The study was carried out in the autumn semester of 2006–2007 at the University of Nottingham. Students had four contact hours each week including one hour for listening/speaking, one hour for character recognizing/writing and two hours for reading/writing. The semester lasted for twelve weeks, at the end of which achievement tests were administered. The tests included a listening test (20% weighting on total score), oral test (30% weighting) and written test (50% weighting). A total score was derived from the three achievement tests, with each receiving a proportional weighting.

Participants were informed that they were under no obligation to take part in the study, but that if they wished to do so they should sign the declaration authorising the use of the collected data, including their test results, for academic publication. All students chose to sign the release.

The questionnaires were group-administered to the students in the regular classrooms in the last week of the semester. It took students approximately fifteen minutes to complete the questionnaire and there was a 100% response rate. Participants were informed that the results of the research would be made available to them, and they were duly given the results after the data were analysed. They found the results useful (expressed orally in class), as most of them would continue with their Chinese studies the following year.

4. Results

Responses to questions in Parts One, Two and Three of the questionnaire were factor analysed (rotation method: varimax with Kaiser normalization) using the Statistical Package for the Social Sciences (SPSS, version 14). Given the relatively small sample, a strict lower limit anti-image correlation of .5 was established for item inclusion, resulting in acceptable factor loadings $>.60$ (MacCallum et al, 1999) for all analyses. Kaiser–Meyer–Olkin (KMO) measures of sampling adequacy are all good and exceed .70.

The factor loadings for the rotated solutions for each section of the questionnaire are presented in Tables 1, 3 and 5. The factor scores, derived by the regression method, for the factors from each section of the questionnaire, were correlated with total, listening, oral and written test scores, to determine their impact on per-

Table 1
Rotated component matrix for character strategies, 5 factors, factor loadings >0.6.

		F1-1	F1-2	F1-3	F1-4	F1-5
1	I try to use the character in sentences orally	0.84				
2	I see if the character has been used in previously learned words or phrases	0.83				
3	I recognize radicals/components which have been learned	0.76				
4	I look at components and associate them with a similar character already learnt	0.67				
5	I listen to audiotapes (or use e-learning materials) and think of the meaning		0.87			
6	I frequently use audio-visual and e-learning material		0.86			
7	I spend many hours a week writing characters		0.80			
8	I review them by going over my flashcards/self-made character cards whenever I have time during the day		0.71			
9	I see what radicals/components are in the character and try to make sense of why they are there			0.84		
10	I try to repeat the character several times aloud (or silently to myself)			−0.79		
11	I review them by writing the characters many times				0.90	
12	I try to recognize the radicals/components in the character				0.63	
13	I teach others the characters that I think they would find interesting					0.85
14	I preview the new words right before or the night before class					0.79

Extraction method: principal component analysis.
Rotation method: Varimax with Kaiser normalization.

Table 2
Correlations between test scores and character strategies, factors F1-1 to F1-5.

	F1-1	F1-2	F1-3	F1-4	F1-5
Listening	0.25	−0.01	0.24	0.18	0.09
Oral	0.13	−0.13	0.12	0.40**	−0.05
Written	0.22	0.40**	0.17	0.28	0.05
Total	0.25	0.30*	0.21	0.31*	0.06

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 3
Rotated component matrix for metacognitive beliefs, 2 factors, factor loadings >0.6.

		F2-1	F2-2
1	I am sure I can do an excellent job on the problems and tasks assigned	0.91	
2	I am confident about my ability to do well at Chinese	0.90	
3	I believe I have the ability to learn a foreign language well	0.84	
4	I know that I will be able to learn the material for this module	0.82	
5	When I get good marks in Chinese I know I am a competent person	0.70	
6	When I do homework, I try to remember what the teacher said in class		0.86
7	When I read material for this class, I say the words over and over to myself to help		0.82

Extraction method: principal component analysis.
Rotation method: Varimax with Kaiser normalization.

formance. The correlations are presented in Tables 2, 4 and 6. Correlations between factors within each section (e.g. F1-1 to F1-5) are zero for orthogonal varimax rotation. The correlations of factors between each section are given in Table 7.

4.1. Strategies for learning characters

Responses to questions in Part One of the questionnaire were factor analysed and the resulting rotated solution is presented in Table 1 for the 5 main factors, which explain 78% of the variance. KMO sampling ade-

Table 4
Correlations between test scores and metacognitive beliefs, factors F2-1 to F2-2.

	F2-1	F2-2
Listening	0.44**	0.13
Oral	0.46**	0.16
Written	0.33*	0.24
Total	0.42**	0.23

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 5
Rotated component matrix for metacognitive strategies, 4 factors, factor loadings >0.6.

		F3-1	F3-2	F3-3	F3-4
1	Chinese broadens possibilities in my future	0.85			
2	I would like to visit China one day	0.80			
3	I am interested in Chinese culture	0.78			
4	I would like to understand Chinese people's thought and values	0.75			
5	I would like to acquire a qualification/certificate in Chinese	0.69			
6	Talking with Chinese native speakers makes my Chinese learning enjoyable		0.83		
7	I plan my schedules for Chinese studies carefully to ensure adequate time for study		0.79		
8	I enjoy doing dialogues in Chinese with peers in this module		0.73		
9	I work on practice exercises after class even when I don't have to			0.81	
10	Before I begin studying I think about the things I will need to do to learn			0.76	
11	I try to set myself goals when I study Chinese			0.73	
12	I find it helpful for the teacher to give me regular feedback				0.74
13	Chinese is essential for my personal development				−0.61

Extraction method: principal component analysis.
Rotation method: Varimax with Kaiser normalization.

Table 6
Correlations between test scores and metacognitive strategies, factors F3-1 to F3-6.

	F3-1	F3-2	F3-3	F3-4
Listening	−0.15	0.17	0.14	0.02
Oral	0.20	−0.10	0.18	0.09
Written	−0.04	0.22	0.51**	0.22
Total	−0.05	0.20	0.45**	0.18

*Correlation is significant at the 0.05 level (2-tailed).

Table 7
Correlations between character strategies, metacognitive beliefs and metacognitive strategies.

	F2-1	F2-2	F3-1	F3-2	F3-3	F3-4
F1-1	0.39**	0.16	−0.15	0.13	0.28	0.11
F1-2	0.13	−0.06	−0.39**	0.51*	0.51**	0.06
F1-3	0.04	−0.55 *	−0.55**	0.08	−0.25	0.05
F1-4	0.12	0.24	0.03	20.2	0.32*	0.26
F1-5	0.21	−0.09	0.05	0.43**	0.06	−0.07
F2-1	–	0.00	0.07	0.49**	0.11	−0.09
F2-2		–	0.37*	−0.13	0.56**	−0.10

Note. Correlations within categories (Character Strategies, Metacognitive Beliefs and Metacognitive Strategies) are zero because factors are orthogonal.
** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

quacy is .72. This part of the questionnaire assesses strategies for learning characters, and Factor 1–1 (F1-1), which explains 33% of the variance deals with techniques for analysing the components and radicals, comparing new characters with previously learnt words and phrases. These are ways of interacting with materials, but do not show significant associations with the performance tests (Table 2).

Factor 1–2, which explains 16% of total variance, is primarily concerned with techniques for reviewing characters, especially the use of audiotapes and e-learning materials, and flashcards. High scoring students for this factor make good use of resources such as tapes and web-based materials, and spend many hours each week writing characters. Table 2 demonstrates significant positive correlations between F1-2 and the written and total test scores.

Oral and total score performance are positively correlated with Factor 1–4 (9% of variance). It shows a propensity for determining radicals and components, and practising character writing. However, this is a weak factor consisting of loadings on only two items.

4.2. Metacognitive beliefs

Two main factors were obtained for metacognitive beliefs, explaining 78% of the total variance (Table 3), and having good KMO sampling adequacy (.78). The main factor (F2-1), accounting for 51% of variance, identifies students who are confident about their ability to learn a foreign language in general, and also believe that they can learn Chinese successfully. They know why they get good marks, accepting responsibility for their learning, and above all exuding confidence. Table 4 shows that this factor correlates positively with student performance on all measures. It is an extremely robust factor.

The second factor (F2-2) is about memory and rote rehearsal (22% of variance). It does not correlate with performance on any of the measures (Table 4). From the point of view of beliefs, it appears that confidence and self-efficacy have the strongest influence on success in attainment tests.

4.3. Metacognitive strategies

Four factors were obtained from the metacognitive strategies data, explaining 70% of the variance (Table 5) and having a KMO value of .71. The first factor, F3-1, (28% of variance) is associated with future aspirations. A similar factor, F3-2, shows an enjoyment in dialogues. However, neither is correlated with the performance tests.

Factor 3–3 shows the importance of setting goals, practice, and thinking about appropriate strategies. There is also an appreciation of perseverance, even when tasks are dull and uninteresting, confirming it as a major determinant of effective learning. This factor positively correlates with written and total achievement measures (Table 6).

4.4. Relationships between strategies and beliefs

Significant correlations do not imply causality, and associations between factors and performance may well act through associations with factors that have not been measured in this study. However, Table 7 provides insights into the nature of the relationships between factors and test scores. F1-2, a substantial character strategy factor, has a significant correlation with the written and total scores. Table 7 shows that it is also significantly correlated ($r = .51$, $p < 0.01$) with the metacognitive strategy factor, F3-3, that also has significant correlations with written and total test scores. Zero-order correlations give an indication of relationships between factors and performance, but it is only when interactions between factors are partialed out that the predictive power of individual factors becomes fully apparent. Controlling for the F3-3 factor, the partial correlations between the character factor F1-2, and total and written scores are reduced to non-significance (Total $pr = .09$, $p = .55$; Written $pr = .20$, $p = .20$). This demonstrates that the contribution the narrow character strategy makes to the explained variance for the written and total scores is subsumed within the broader metacognitive strategy.

The substantial main factor for metacognitive beliefs (F2-1) is significantly correlated with all test scores, but shows no significant association with the metacognitive or character strategy factors that are also corre-

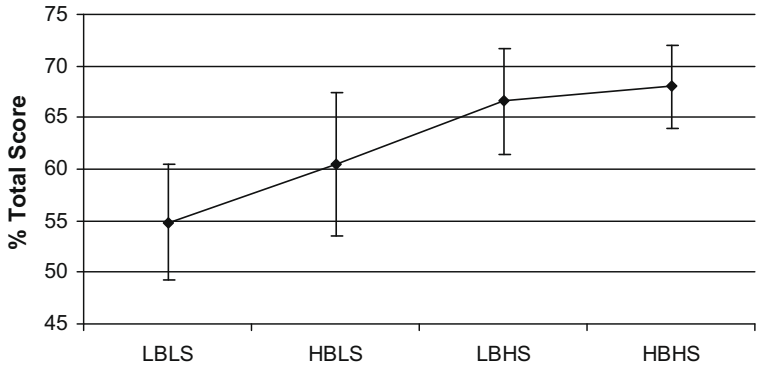

Fig. 1. Interaction between metacognitive beliefs and strategies. Error bars represent 95% confidence intervals; S = metacognitive strategy factor F3-3; B = metacognitive belief factor F2-1; H = high score on factor; L = low score on factor.

lated with test performance. Instead, this metacognitive belief factor is significantly correlated with factors that are not related to academic performance (F1-1, F3-2). This suggests that the strategy factor F3-3 and belief factor F2-1 independently influence total performance. To investigate the influence of these factors the subjects were divided into four groups: high scores for both belief and strategy factors (HBHS, $n = 14$); low scores for both (LBLS, $n = 13$); high scores for belief and low scores for strategy (HBLS, $n = 9$); low scores for belief and high scores for strategy (LBHS, $n = 9$). The result of a one-way analysis of variance, with total score as the dependent variable, was statistically significant, $F(3,41) = 7.07$, $MSE = 64.59$, $\eta^2 = .34$, showing a large effect size. Planned contrasts with the HBHS group were significant for LBLS ($p < 0.001$) and HBLS ($p = 0.03$), but not for LBHS. The results are summarized in Fig. 1, and clearly show the impact of the strategy factor. Students with low scores for both factors have the lowest mean score, and those high for both factors have the highest mean score. However, having high strategy scores, but low self-efficacy, does not make a difference when compared with the highest scoring group, whereas low strategy and high self-efficacy scores are associated with a significant drop in total performance scores.

5. Discussion

The analyses demonstrate that metacognitive beliefs and strategies have an impact on student performance. For listening, which has a 20% loading in the total achievement score, only one factor is found to be associated with performance, F2-1. This is a factor that identifies students' self-efficacy. Cotterall (1999) has suggested that it is necessary to provide teachers with a means of identifying and supporting individual learners who need to develop their sense of self-efficacy. If this can be done before they engage in learning tasks, the ensuing intervention in their language learning experience should result in superior performance. The questions associated with this factor certainly provide such information, and high factor scores, which indicate a positive response to the statements, are associated with higher achievement. However, Fig. 1 suggests that high confidence in learning abilities is not sufficient for improvement in performance, and appropriate metacognitive strategies are also required.

Oral performance reflects an interactive ability, using both listening and speaking skills, and it is not surprising that F2-1, the main factor in listening, exerts a large influence on oral performance. Oral performance is also associated with the weak factor F1-4, which deals with reviewing and recognizing character components.

Writing has the largest weighting in the total score for the course (50%) and is associated with 3 factors. The main factor F3-3 ($r = .51$) shows the importance to students of thinking about appropriate strategies and setting goals. Successful students practise even when they are not required to do so, trying to find suitable strategies to achieve the goals they set for themselves. Perseverance, even when tasks are dull and uninteresting, is confirmed as a major determinant of success (Carroll, 1963). This factor positively correlates with both written and total achievement measures (Table 6). As with listening and oral performance, writing is also associated

with the self-efficacy factor F2-1. The third factor, F1-2, is directly linked to strategies associated with learning characters: they are actively and intensively reviewed, using multi-modal audio-visual and interactive e-learning materials. Character learning clearly benefits from an active approach. The pedagogical implication is that students benefit from the provision of interactive media and opportunities to write and review characters using simple but effective media such as flashcards. This clearly points to the inclusion of a mixed media approach that encourages active learning.

The total performance score is a composite of listening, oral and writing skills and this influences the associated factors. There is a strong strategy factor (F3-3) that emphasises perseverance and setting of personal goals, based on study strategies that the student selects as being appropriate for the learning tasks. This is the main factor associated with the writing component that has the highest weighting for the composite total score. It confirms the proposal that learner autonomy presupposes a high degree of metacognitive awareness (Chamot, 2005; Zhang 2001). The total score performance is also strongly influenced by the self-efficacy factor (F2-1) that has significant associations with listening, oral and writing tasks. There is a small correlation with the character strategy factor F1-2, but this is largely subsumed within the broader metacognitive strategy factor F3-3. The results summarised in Fig. 1 suggest that although having a sense of self-confidence is linked to higher total performance, it is not necessarily associated with the metacognitive strategies that predict higher performance, and beliefs will not compensate for inappropriate strategies.

These results fit well with Yang's (1999) study that demonstrated the importance of connecting language learners' beliefs and learning strategies, and the need for strategy training programs to attend to students' beliefs about their second language learning. They also reinforce the position of Gardner and Miller (1999) that uninformed beliefs about language learning may lead to dependence on less effective strategies, and that learners' beliefs are crucial to the development of learner autonomy. Tremblay and Gardner (1995) have also found self-efficacy to be an important antecedent to motivational behaviour in language learning. The results also confirm those of Ehrman (1996), who identified a positive relationship between high self-efficacy and end-of-training ratings in speaking, reading and total scores. In essence, the results from this study give rise to the optimistic outlook that self-efficacy may be boosted by appropriate strategy training because having the right learner strategies in place should lead to improved performance.

6. Conclusion

The main factors associated with overall CFL performance in this study show that those students who are confident about their ability to learn the language, and accept responsibility in planning their learning, do well in achievement tests. This suggests that CFL instruction should direct students' metacognitive beliefs and strategies so that they realise that they have both the ability to learn the language well, and effective strategies in place, such as setting goals, thinking about appropriate actions and persevering at the ensuing tasks.

Strong metacognitive beliefs and strategies empower second language learners. When they have positive beliefs in themselves and adjust their learning strategies, they obtain higher grades. This is consistent with Mevarech and Kramarski's (2003) proposal that metacognition should be embedded in the learning process, and supports Shen's (2005) conclusion that students should be encouraged to analyse their own learning processes in order to improve their metacognitive learning strategies, which will reinforce motivational aspects of self-efficacy. This explicit metacognitive strategy training has been shown to contribute to improvements in students' vocabulary learning (Rasekh and Ranjbary, 2003) confirming that it can be successfully applied to CFL studies.

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