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Self-efficacy of college students to learn English: Reading comprehension activities as a result of differential reflection and skill training

Introduction

The focus on student's self-beliefs as a principal component of academic motivation is grounded on the assumption that the beliefs that students create, develop, and hold to be true about themselves are key forces for academic success or failure (Pajares, 2003; Pintrich & Schunk, 1996; Sternberg, 1994). Self-efficacy has proven to be a more consistent predictor of behavioral outcomes than have other self-beliefs (Graham & Weiner, 1996). Efficacy beliefs play essential role in all phases of self-regulation and achievement (Zimmerman, 1990, 1998). When self-regulatory processes play an integral role in the development and use of study skills, students become more acutely aware of improvements in their academic achievement and experience a heightened sense of personal efficacy (Zimmerman, Bonner & Kovach, 1996).

Enhancing self-efficacy has received consistent research attention. Theorists in the field agree that enhancing the efficacy beliefs of students will contribute to academic performance more than skill training alone, since efficacy beliefs can potentially be generalized. Furthermore, the generality of efficacy stems primarily from metacognitive changes in people's beliefs concerning their agentive power for self change rather than from skill commonalities, cognitive structuring of similarities, temporal co-development, or strategy transfer (Bandura, 1997).

The generality of efficacy beliefs potentially also strengthens personal traits such as, self-esteem. Judgments of personal efficacy influence the choices students make, the effort they expend, the persistence and resilience they exert when obstacles arise, and the thought patterns and emotional reactions they experience. High achievers compared with low achievers feel self-efficacious and personally responsible for the control of their academic-learning process (Bandura, 1986, 1995, 1997; Pajares, 1996, 2003; Pintrich & DeGroot, 1990; Zimmerman &, Bandura, 1994; Zimmerman, Bonner & Kovach, 1996; Zimmerman & Schunk, 1989).

As children grow older with wider experience and cognitive development, they are progressively more accurate in appraising their abilities. Their efficacy beliefs concerning specific behaviors tend to become shaped and molded. After people develop adequate ways of managing situations that recur regularly, they act on their perceived efficacy without requiring continuing directive or reflective thought. Routinization can detract from the best use of personal capabilities, however, when people react in fixed ways to situations requiring discriminative adaptability. Routinization is also self-limiting when people settle for low-level pursuits on the basis of self-doubts of efficacy and no longer reappraise their capabilities or raise their vision of themselves. A change occurs only when the person encounters a significant experience. When routinized behavior fails to produce expected results, the cognitive control system comes into play again. New modes are considered and tested (Bandura, 1997).

The ability to discern, weigh, and integrate relevant sources of efficacy information improves with the development of cognitive skills for processing information. These include attentional, memory, inferential, and integrative cognitive capabilities for forming self-conceptions of efficacy. The development of self-appraisal skills also relies on growth of self-reflective metacognitive skills to monitor one's regulative thought, to evaluate the adequacy of one's self-assessment, and to make corrective adjustments of one's appraisals if necessary (Bandura, 1997, p. 115). Effective intellectual functioning requires metacognitive skills such as organizing, monitoring, evaluating and regulating

one`s thinking processes (Flavel, 1978a; Meichenbaum & Asarnow, 1979).

Studies have shown that reflection enhances metacognitive processes such as: self-monitoring, self-evaluation, self-reaction and attribution (Katz, 2001; Zimmerman, Bonner & Kovach, 1996). Since self appraisal of efficacy is a form of metacognition and efficacy beliefs are structured by experience and reflective thought (Bandura, 1997), we view reflection on self-efficacy as a forethought process so that the mental processes students will go through while reflecting on it, over time, will have an effect on the processing of their efficacy appraisals. Their appraisals will go through a change. Reflection involves investment of time and mental creative effort (Perkins & Swartz, 1992). This being so, reflecting on self-efficacy forces those who tend to avoid thinking and rely on previous efficacy appraisals to rethink and to repeatedly revise what is produced in order to fulfill personal standards of quality.

In the present study self-efficacy is investigated in the setting of English for academic purposes (EAP) of reading comprehension. Foreign Language (FL) learning researchers acknowledge that motivation, attitude and anxiety can hinder learning (MacIntyre, 1995; Sparks & Ganschow, 1995). They also propose that FL learning difficulties are likely to be based on native language learning, and that facility with one's language "codes" (phonological / orthographic, syntactic, semantic) is likely to play an important causal role in learning a FL. This is called "The Linguistic Coding Differences Hypothesis" (LCDH) for two reasons: First, the researchers convey that language learning occurs along a continuum from very good to very poor FL learners and that a discrete entity such as a "FL learning disability" implied in the "deficit" notion does not exist. Second, unsuccessful at-risk FL learners do not have overt language deficits. However, they do exhibit subtle but statistically significant language *differences* when compared to good, successful not-at-risk FL learners (Sparks & Ganschow, 1993a). Inefficiency of the language processing codes may produce interference resulting individual differences in FL acquisition (Sparks & Ganschow, 1991). An important implication of these studies for FL educators is that they should consider dealing with basic language skills

including possible problems with the phonology, syntax, and / or semantics of the language (Sparks & Ganschow, 1993). In the context of this research, English is referred to as a foreign language, as it is not the official language of the country in which it is studied (Israel). English is not spoken by the majority of the population in daily communication but rather is formally studied in schools and universities.

English is a language derived originally from an Indo-European lineage. Hebrew, in contrast, is a Semitic language. Both languages have alphabetic orthographies. However, in English the basic phonological unit is the phoneme, above which there are only words and affixes. The English morphology is concatenative; hat is, prefixes and suffixes are joined to the original base word (which can function as an independent word with semantic and phonological properties) in a linear fashion. Hebrew morphology is root-based in a non-concatenative or non-linear way (Bentin & Frost, 1995). All Hebrew verbs and most nouns have roots and word patterns. The root contributes semantic and morphological information, whereas the word pattern contributes information about the part of speech to which the word belongs. The Hebrew orthography is written from right to left and has two written forms. In contrast, English is written from left to right linearly with all vowels forming an integral part of the alphabet and in all senses being equivalent to other letters. Finally, on a continuum of shallow to deep orthographies, English is considered a deep orthography in that it has an irregular relationship between graphemes and phonemes. Voweled Hebrew could be considered a shallow orthography in that the grapheme-phoneme relationship is quite regular, but unvoweled Hebrew should be considered somewhere in between the two due to the fact that vowel sounds are not represented. This results in many homographs, words that could be decoded in several ways (Shimron, 1993). Hebrew students have to confront a relatively irregular vowel system, which depends to a large degree on orthographic rules for their correct pronunciation as well as morpho-phoneme knowledge. This irregular orthographic system, as well as the differences in the Hebrew word morphology, may account for difficulties in the acquisition of English among Hebrew speaking students. In acquiring

English, native Hebrew speakers may face difficulties resulting from the possible intrinsic differences in word-recognition processes that stem from the different morphologies of Hebrew and English. It may be that different strategies are used for performing word recognition in the two languages (Geva & Siegel, 2000). When students study FL that is based on the same linguistic properties as their native language, they may use the same skills and techniques as they do in their first language for new word recognition (Bialystok, 2001). When there are considerable differences between the two orthographies, then word recognition skills may need to be adapted.

Reading comprehension is a process requiring extra-linguistic input. It includes background knowledge and context, as well as knowledge of people's intentions. It also involves analysis of incoming phonological, grammatical, morphological, syntactical and pragmatic information as well as storing and remembering the information (Kahn-Horwitz, 2001). Despite the differences between the two languages, first language (L1) ability in Hebrew was found to be accountable for the reading acquisition in EFL (Kahn-Horwitz, 2001). This finding extends support of the LCDH to readers of a Semitic orthography (Hebrew) acquiring English as a FL reading. The LCDH argues for a core ability in a native language that is transferred to a foreign language reading ability and determines the success a novice FL reader will have in becoming successful skilled FL reader.

Whether the difficulties in English FL learning of adult education students are based on their native language processing codes or on the differences between the orthographies of these two languages, which requires the learner's skill adaptation, a large number of education students in colleges and universities in Israel fail to cope with EAP course demands. The EAP program at Teacher Training Colleges poses another difficult demand on the Israeli student; he has to read authentic academic texts relevant to his professional objectives, which are much more complex than other texts. Although these students generally do well in other subjects, they get low scores or fail and have to take the EAP courses again. The need to take one course more than once causes negative

feelings towards EAP courses and many try to avoid taking them. Many students have experienced a history of failures in their past English learning as children in elementary schools or as adolescents in high schools. Even after having passed the exams they seek professional translation help for coping with needed academic reading materials. They express lack of motivation and low self- efficacy to learn EAP.

No research using reflection on efficacy beliefs regarding EAP in this country has been done to enhance efficacy beliefs of low EAP level students before. These students' efficacy beliefs are the challenge of the present study. Here they are considered the D level students who have to proceed through C, B and A levels in order to finish their duties. The theoretical contribution of this research is the demonstrated capability of combined reflection and EAP reading comprehension skill training to enhance Self-efficacy appraisals of adult Education students and improve their EFL reading comprehension performance.

Various researchers have suggested that quantitative efforts in the study of self-efficacy should be complemented by qualitative studies aimed at exploring how efficacy beliefs are changed (Pajares, 1996b; 1997; Schunk, 1991; Zeldin, 2000). The purpose of this study was also to get a deeper understanding of the efficacy beliefs process of change in an authentic environment by using qualitative methods. It was hypothesized that EAP student' reading comprehension self-efficacy and performance would be enhanced as a result of reflection and skill training.

Methodology

The sample population consisted of 87 female students of Education, nine teachers in elementary schools and 78 student teachers. The sample varied by socioeconomic status and culture. The intervention period comprised a whole school year. The teachers were guided before the beginning of the academic year.

Studies on self-efficacy have consistently demonstrated that efficacy beliefs are influenced by acquisition of skills, including modeling of cognitive strategies, self-

verbalization of cognitive operations and strategies, goal setting, self-monitoring and social comparison (Zimmerman, 1996). Other studies have also shown that different types of psychological influence such as evaluative feedback and social comparative information have an impact on efficacy beliefs (Bandura, 1997).

Appraisals of efficacy beliefs may not depend only on reflection but on skill training as well. Reflection on self–efficacy alone might not help students who lack specific skills needed for a certain task performance. At the same time, skill training alone might not be enough to raise self-efficacy beliefs. Therefore, the sample was randomly divided into 3 treatment groups: The first, a D level group (n=25) was given reflection and EAP reading comprehension skill training treatment, the second, a D level group (n=41) underwent EAP reading comprehension skill training treatment alone, and the third (n=21) contained students who did not take an EAP course that academic year and would probably take it next year. That group served as a control group and did not get any treatment. The purpose of the manipulation was to study the effect of each treatment on efficacy beliefs of the students.

The students in the first group were asked to reflect on their *self-efficacy* to read English. Guided questions or "Thinking Organizers" (Perkins & Swartz, 1992) helped them. Each time they reflected they could focus on another metacognitive skill such as: selecting important attainments, comparing, self-monitoring, organizing, integrating, evaluating and regulating thinking processes. By the end of the school year, each student accomplished 20 reflection tasks. The 500 student reflection tasks were analyzed by constant comparative qualitative method of analysis (Denzin & Lincoln, 1994; Glaser & Strauss, 1967). Core constructs were generated by the grounded theory procedure. Data collection and analyses were validated by qualitative methods.

A 20- item Likert type questionnaire was built to estimate students' self-efficacy beliefs prior to intervention and post intervention. The questionnaire was an adaptation of Zimmerman & Bandura's "Scale of Measuring Perceived Self-Regulatory Efficacy for Writing" (1994) and Katz's "Scale of measuring self-efficacy beliefs in audience

adaptation writing activities" (Katz, 2001). Consultation with EAP researchers and experts helped in adapting it to the student teachers and teachers. Its validity and internal consistency reliability were checked (Cronbach's alpha = .81). Performance outcomes were estimated by a reading comprehension test, taken from a reading comprehension text book (Rotholz & Solomonov, 1999) and inter-rater reliability was checked. This quasi-experimental, pretest-post-test control group design used paired t-tests to study the difference between pre- and post training - efficacy beliefs, and performance of students in each group. The constant comparative qualitative method of analysis was used in order to gain a deeper insight of the changing efficacy appraisal process (Denzin & Lincoln, 1994; Glaser & Strauss, 1967).

Results

Part I (Quantitative)

The differences between efficacy appraisals to read and comprehend English pre- and post- training are provided on Table 1.

Table 1
Mean efficacy for reading comprehension pre – and post – training,
and t value for paired-samples of 3 groups

Group no.	mean pre	mean post	t		df	N
1.	3.92	6.42	-7.175	**	24	25
2.	5.67	5.80	- .344		40	41
3.	6.50	5.65	4.542	**	20	21

(sig. 1-tailed) p < .001**

Training groups
1 = reflection & skill training
2 = skill training
3 = control group

The differences between reading comprehension performance pre- and post-training are provided on Table 2.

Table 2
Mean performance of reading comprehension pre - and post - training, and t value for paired-samples of 3 groups

Group no.	mean pre	mean post	t		df	N
1.	5.14	7.22	-4.125	**	24	25
2.	4.99	4.94	.129		40	41
3.	6.71	6.05	2.795	*	20	21

(sig. 1-tailed) p < .001 **(sig. 1-tailed) p < .05 *

Training groups
1 = reflection & skill training
2 = skill training
3 = control group

Significant differences were found between pre- and post-training of EAP *efficacy beliefs* of the reflection and skill training group students, as shown in table 1. Post-training efficacy beliefs were higher than pre-training efficacy beliefs (p < .001). Significant differences were found between pre and post training of EAP *performance* of this group as shown in table 2. Post-training performance were higher than pre-training performance (p < .001). Post-test efficacy beliefs were significantly lower than pre-test efficacy beliefs of control group students (p < .001), as shown in table 1, and post-test performance was lower than pre-test performance of control group students (p < .05), as shown in table 2.

No differences were found in the group that only received skill training.

Part II (Qualitative)

The purpose of the qualitative part was to look into the construction of the change process of education students' efficacy beliefs to learn English in an authentic

environment. The 500 reflection activities of students formed a natural real history of the change of their efficacy beliefs. Core constructs were generated by the grounded theory procedure. Data collection and analyses were validated by qualitative methods. The data gathered, all pieced together, led to a deep understanding of the self-efficacy change process. The core constructs revealed seven thinking sub-processes students have used during their reflective work that formed the change: 1] Previous experience recall, 2] self-awareness, 3] strategy knowledge construction, 4] comparison and contrast, 5] evaluation, 6] conclusion drawing, and 7] transfer.

1. Previous Experience Recall

Recall of experiences in past English learning contains enormous descriptions of frustration, lack of confidence and anxiety, all of which are negative:

> *"We all hated English… it was a trauma… a nightmare… all my experiences in English were failures" (2)*[1]

Recall is accompanied by causes of failure:

> *"The ways we were taught were not interesting… the way teachers treated us, we hated them… (1)*
> *"I haven't got the patience to learn, I am a failure… I'll never make it" (2)*

and descriptions of ways of coping with the English problems:

> *"I just missed classes. I ran away from it…I couldn't stay in, I was afraid…" (1)*
> *"I used to sit and draw. I have kept my drawings till today…." (2).*

2. Self-Awareness

Self-awareness is a basic sub-process, on which the other processes rely. Without self-awareness the higher thinking processes will not occur. Self-awareness is enhanced while students go through the 20 reflection assignments during the year. When self-

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1. Reflection task number

awareness is low students perceive reflection tasks as the teacher's interest in their ways of thinking. This flatters them, relaxes them, puts them in the center of the learning process, and even triggers them to make a new start in English:

> *"... That you are interested in my thoughts gives me a feeling of motivation to learn... a new hope for success... that my opinion is important... this is a successful experience in itself... It's unbelievable, I like English... (2)*

When self-awareness is high, students are able to describe cognitive as well as affective processes they go through, which enables comparisons and contrasts, evaluations and conclusions about efficacy beliefs. They describe how the reflective process helps them understand successes and failures and ways of improving things:

> *"I'm aware of cognitive and affective processes I'm going through... I know why things go wrong and how to improve them. I know where to put the focus and understand, why and how success happens. This is how reflection helps me. . I have learnt things about myself that I didn't know before (5).*
>
> *"All of a sudden I am struggling with the impossible...with the unbelievable...learning English has become part of my life... I feel comfortable using English..." (4).*

3. Strategy Knowledge Construction and Usage

This sub-process contains "thick" descriptions of analyses of students' skills and strategies. Students describe how they use them, what helps them, what should be improved and how. These rich descriptions are accompanied by positive emotions, high self-efficacy, and a desire to control learning and take risks. Students also describe this sub-process as a product of reflection. Previous knowledge of strategies hardly existed before or did not exist at all.

> *"Today, when I first look at the text, I look for familiar words... then I skim for the main idea... then I've got my friends, we work together, I'm not afraid anymore. I know we'll make it after all . .*

We had to choose an article in the newspaper and write its main idea…
Wow ! that was a real challenge ! (8)
"Variety of strategies – this is new… haven't heard about this before (9).

4. Comparison and Contrast

The forth sub-process is a profound divergent comparison and contrast accompanied by mindful judgment. This sub-process is used in two situations: When efficacy beliefs are still low and a failure occurs, a comparison encourages the student:

"When I hear my friends speak English so nicely, I am frustrated, then I take into account all my failures and successes from the beginning of the year till now and I see that I've made a lot of progress, so I'm okay after all…" (10)

This sub-process serves as reinforcement, when efficacy beliefs are high:

"Once I was afraid of English, today it's hard but at least I don't suffer, I get reasonable marks" (10)
"I hated it in the past, but I love it today" (10).

5. Evaluation

This fifth sub-process does not contain rich evidence and is very often combined with conclusion drawing, judgment or divergent comparisons and contrasts:

"English learning is very important, the lessons should contain as many activities as possible, and teaching methodology should progress from the simplest to the most complicated, then you'll get high outputs" (10)
"The most important factor in learning is one's will (9).

6. Conclusion Drawing

Conclusion drawing is done after a deep reasoning and is mostly used in the last reflection tasks. The conclusions are very well organized. The new knowledge built

contains future plans and relevant operational proposals for the future. These conclusions are clearly expressed. The conclusions refer to the following changes:

A change in EFL perception:

> *"I see that learning English is like learning any other subject, you don't have to be genius" (16)*

A change in self-efficacy appraisal:

> *"I am more successful today, I can do better, this course has changed my attitude to English, you have to join it, to control it" (18)*

A change in student expectations:

> *"I have changed my ways of thinking, my expectations are higher… I've got to learn more (14)*

A change in emotions:

> *"It is gorgeous, I have never found myself enjoying English so much as I do today. (I'm almost 40!) I simply love it. (20)*

Conclusions also refer to the cause of the change:

> *"Reflection demands deep thinking, it enabled the progress of the change in my ways of learning and my emotions" (18).*

7. Transfer

Transfer is the highest level of thinking. The enhanced efficacy beliefs of a number of students are transferred to other situations and domains as illustrated by the following students` words:

> *"If I succeeded in the most problematic subject – English, I'll probably succeed in easier subjects than this one" (13)*
>
> *"If I succeeded, why not my students….my sister and brother" (15)*

Discussion

The purpose of the study was threefold. First, to find out which training would be the best for enhancing *efficacy beliefs* of EAP students to read and comprehend English. Second, to find out which of the trainings would be the best to enhance EAP *performance* and third, to provide *a developmental perspective on students' change of efficacy beliefs*.

The results show that 1] Low *efficacy appraisals* and 2] *performance* were significantly enhanced as a result of the combination of reflection and EFL reading comprehension skill training treatment. This treatment appeared to be the best treatment. "As long as people continue to believe in their ability to perform a given activity, they act habitually on that belief without having to keep reminding themselves of it. Should they cease to believe in their ability, they would behave differently. If significant changes occur in task demands or situational circumstances, personal efficacy is promptly reappraised as the guide for action under the altered conditions" (Bandura, 1997, p. 34). This is exactly what happened in this study. The reflection and skill training treatment established new situational circumstances where efficacy beliefs were reappraised. Under a significantly changed self-efficacy, actions were also altered. Some of the students became aware of their problems and tried to work them out, others realized those were their teachers' mistakes and acted as if they got another chance. One student was so motivated by the new insights she had gained about her learning, that at the end of the academic year she received an A, a top score.

3. *The qualitative analysis supported the quantitative results* and enabled a deeper insight into the process of change of the efficacy beliefs of the participants. The impact of the processes explored extended beyond the thinking sub-processes. New insights were gained through the qualitative analysis:

a. *A change in perception of English learning.* The reflection and skill training treatment brought about a change in the perception of EAP learners. By the end of their training they understood that English can be learnt by any student and not

only by the brilliant ones. All it needs is one's control over his own learning and effort expenditure. English learning is possible like any other subject.

b. *A change in the ways of performing in EAP.* There is substantial evidence describing the change in students' performance. Students express happiness, fun, pleasure and even unexpectedly love of performing activities during the EFL classes.

c. Reflection during a long period of time enhanced *student awareness of strategies, of skills, of learning processes and of the reflective training contribution.* Awareness of strategies, skills and processes of learning the students have gone through enabled further higher thinking processes such as analysis, evaluation, judgment, conclusion-drawing and transfer, and finally, the students understood that the metacognitive process of reflection brought about the change and that reflection can be used in learning other subjects and by other people as well.

d. *A change in learning perception in general.* One of the most important insights was an extreme change in the students' perception of learning in general. By the end of their training they became self-regulated learners willing to take responsibility and control over their own learning. Through reflection they became involved in higher order thinking processes, metacognition, and self-regulatory skills and together with EFL skill training they became more self-efficacious.

Students' self-efficacy beliefs influence the self-regulated learning strategies they use (Pajares, 2002). Students who believe they are capable of performing academic tasks use more cognitive and metacognitive strategies, and, regardless of previous achievement or ability, they work harder, persist longer, and persevere in the face of adversity. Students with high self-efficacy also engage in more effective self-regulatory strategies, such as monitoring their academic work time effectively (Pintrich & De Groot, 1990; Schunk & Ertmer, 2000). How people behave can often be better predicted by their self-efficacy beliefs than by what they are actually capable of accomplishing, for these self-perceptions help

determine what individuals do with the knowledge and skills they have (Pajares, 2002). In our case, unwarranted low confidence, rather than lack of capability, was responsible for maladaptive academic behaviors and diminishing interest in EAP learning and achievement pre-training.

e. The descriptions of despair and low efficacy beliefs in the first three reflection tasks were replaced by "thick" descriptions of satisfaction and high self-efficacy to learn English in the next reflection tasks. A new positive cycle of success – high efficacy beliefs and further success was created. *"Thick" descriptions of enhanced efficacy beliefs* were followed by better performance that then again generated higher self-efficacy beliefs.

Theoretical Contribution

The theoretical contribution of the study is the possibility of shaping students efficacy beliefs through understanding the processes of efficacy change development. A proper nurturing of the sub-processes will enhance efficacy appraisals. The possibility of influencing faulty self-efficacy appraisals opens new avenues for changing biased systems of students as they progress through their studies. Equipping students with intellectual tools as well as with efficacy beliefs and intrinsic interests to educate themselves throughout a lifetime are the key factors of human agency (Bandura, 1986; Pajares, 2003; Zeldin, 2000).

The knowledge we have gained might be used as a tool of nurturing and shaping efficacy beliefs of student-teachers and teachers as they go through their professional development. This research creates a widening educational chance for every adult who had failed in the past to become efficacious and achieve academic success through heavy investment. Some of the participants transferred their self-efficacy beliefs into other situations and other domains, which is one of the most important outcomes of this study. Reflection on self-efficacy as a learning habit should be used as a tool of

nurturing young students high order thinking processes and efficacy beliefs in school as well (Katz, 2001).

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