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Enhancing EFL At-risk Students' Meta-motivational Self-regulation: Immediate and Delayed Impact on Their Strategy Use and Academic Achievement

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ABSTRACT

Self-regulated language learning-- referring to language learners' awareness and self-management of their own learning behaviors -- has been the target of research on language education lately. Yet, most language research endeavors and instructional interventions heretofore have focused on cognitive and metacognitive self-regulation with very scanty empirical focus on (meta-) motivational self-regulation. The issue gains particular impetus with at-risk EFL students whose lack of motivation is often misinterpreted as lack of ability. The current study investigated the immediate and delayed impact of enhancing EFL at-risk students' meta-motivational self-regulation on their language strategy use and academic achievement. Sixty seven at-risk EFL students in Abu Dhabi University, the United Arab Emirates, took part in this study. They were randomly assigned to an experimental group or a control group condition. Their language strategy use was assessed via an inventory developed and validated by the researcher, whereas their cumulative grade point averages (CGPAs) were used for tapping their academic achievement. Results of the study indicated that the experimental group students who received the suggested instructional intervention outperformed their control peers in both language strategy use and academic achievement. Details of the instructional intervention, assessment instruments, and the results of the study are discussed along with recommendations for language instruction and suggestions for further research.

KEYWORDS: metamotivational self-regulation, at-risk EFL students

1. INTRODUCTION

Research on meta-motivation has gained momentum in educational settings over the last few years due to the spirited interest in learner autonomy, student-centeredness, and self-regulated learning. Originally, “meta-motivation” was first used by Maslow (1970, cited in Daniels, 2005) to refer to the motivation of people who are self-actualized, self-transcendent, and driven by innate forces beyond the scope of their basic needs to reach their full potential. Those individuals represent the highest level in Maslow’s pyramid of needs. The emergence of self-regulated learning models led to the re-conceptualization of “meta-motivation” in terms of “individuals’ awareness of and control over the factors that energize and direct their learning towards the achievement of own goals” (Wolters, 2003: 190). Meta-motivational self-regulation, in turn, has been used to refer to “individuals’ knowledge, monitoring, and active management of their motivation and motivational processing” (Wolters, 2011: 256) or “the dynamic deployment of resources and tactics to increase students’ ability to understand and regulate their own motivation” (Du Boulay et al, 2010: 212).

Besides its significance for language learners in general, meta-motivational self-regulation is of particular significance for language underachievers, slow learners, and the rest of those learners often characterized as at-risk. Their lack of motivation is sometimes conflated with lack of ability leading more often to a cycle of failure and depression in language learning settings. Motivation literature carries evidence that those students suffer motivational deficits that negatively affect various aspects of their learning. They are more likely to be progressively less engaged academically, leading, in turn, to poor academic performance and underachievement (Zental & Lee, 2012).

The negative effects of motivational deficits, as Siegle and McCoach (2006) argue, are not limited to underachievers and at-risk students, but can extend to normal or even high-achieving students, who are not normally considered at-risk for academic failure, and make them perform below their potentials. Empirical research also indicates that motivational factors can be better predictors of achievement than ability because they are more likely to determine

how students use their skills and knowledge in learning settings (McCoach & Siegle, 2001; Stolp & Zubrucky, 2009). Likewise, they can override deficiencies in one's language aptitude and learning conditions (Dornyie, 2000). Enhancing the metamotivational self-regulatory skills of at-risk language learners might help unleash their potential abilities and improve their functioning in language settings, an area that has not received due attention in self-regulated language learning literature.

1.1 Self-regulated learning

Heated interest in self-regulated learning has mounted since the term was coined by Zimmerman in 1990s. As defined by Schunk and Zimmerman (1998), self-regulated learning is "the process whereby students activate and sustain cognitions, behaviors, and affects, which are systematically oriented toward attainment of their goals" (P.309). Pertinent literature indicates that students are more effective when they take a purposeful role in their own learning (Pintrich, 2000; Schunk, 2001; Zimmerman, 2000) and that self-regulated learners have high levels of knowledge about different learning strategies and have the ability to select, monitor, and regulate their use of strategies when engaged in academic tasks (Wolters, 2003). Empirical evidence has related the enhancement of self-regulated learning to better gains in various aspects of language learning such as improved students' learning performance (Cheng, 2011), enhanced reading comprehension and increased reading engagement (Ammar, 2004), higher level literacy skills and critical thinking (Howard et al., 2001; Berry, 2002), and overall academic achievement (Schunk, 2001).

This heated interest in self-regulation brought about a number of models of self-regulated learning, all focusing on enhancing students' control over their learning for better attainment of own goals – albeit disagreement on factors involved. The first of these is Zimmerman and Colleagues' Social-Cognitive Model (Zimmerman, Bonner & Kovach, 1996). It is a cyclical model comprising four correlated processes; namely, self-evaluation and monitoring, goal setting and strategic planning, strategy implementation and monitoring, and strategic outcome monitoring.

In “self-evaluation and monitoring”, students evaluate their self-efficacy and assess current learning progress based on their record of past learning performances and outcomes. “Goal setting and strategic planning” involves analysis of learning tasks, setting specific goals, creating learning plans and refining learning strategies. In “strategy implementation monitoring”, students employ specific strategies in their learning according to their learning plans and monitor their accuracy in implementing these specific strategies. The last phase is strategic outcome monitoring, in which students judge their personal effectiveness based on their learning performances and actual strategic processes.

Pintrich (1999, 2000) expanded the socio-cognitive model of Zimmerman and Colleagues to include three areas of regulation; namely, cognition, motivation, and environment. He believes that students are not only able to self-regulate their cognitive learning strategies but can as well manage resources operating and controlling the environment. Consequently, Pintrich (2000) redefined self-regulated learning as “an active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition, motivation, and behavior guided and constrained by their goals and the contextual features in the environment” (P. 453). The proposed model consists of three distinct phases of self-regulation, including (a) forethought and planning; (b) performance monitoring and control; and (c) self-reflection and attribution. These phases apply to three areas of regulation; namely, cognition, motivation, and context (Pintrich & Zusho, 2002).

Boekaerts’ model of self-regulated learning (1999) classifies the functions of self-regulation into two categories, each representing a type of prior knowledge. The first category pertains to self-regulation of cognition and is sub-classified into content knowledge, cognitive strategies, and regulatory strategies. The second concerns self-regulation of motivation and is, as well, subdivided into motivational beliefs, motivational strategies, and regulatory strategies. In his three-layered model, Boekaerts views self-regulation as involving a “series of reciprocally related cognitive and

motivational processes operating together on the different components of the information processing system” (P. 447). The innermost layer concerns students’ regulation of different cognitive strategies based on learning materials and objectives. The middle layer pertains to regulation of the learning process via employing strategies such as planning, monitoring, assessing and correcting in order to direct learning endeavors. The outermost layer involves motivation control, willingness control, and allocation of resources. Boekaerts sees that self-regulated learners can regulate their strategies or behaviors according to their intrinsic feedback, while non-self-regulated learners deal with new information depending on extrinsic regulation.

1.2 Metamotivational Self-regulation

Although the initial assumptions and conceptualizations of self-regulated learning, as discussed in the above review, focused on the regulation of both cognition and motivation, most past research in this regard, as Dornye (2000) concluded, “has focused on students’ knowledge and control of cognitive and metacognitive strategies with little emphasis on motivational self-regulation or metamotivational skills” (P. 535). This in turn fueled calls by educators and researchers to include motivational and metamotivational aspects in self-regulated learning models on the premise that these two components are interrelated and are more likely to reciprocally reinforce one another. For example, Du Boulay et al. (2010) expressed a need to “interweave the motivational and affective with cognitive and metacognitive tactics in educational systems to produce expert behaviors” (P. 198). In language learning settings, a call has been voiced by Oxford and Burry-Stock (1995) that researchers and educators must reconceptualize L2 learning strategies to include the motivational and affective sides of learning along with the intellectual sides. Similar calls have been echoed by many educators and researchers in various learning contexts (Dornye, 2005; Meyer & Tuner, 2006; D’Mello et al., 2008; Desselle, 2009; Theys & Desselle, 2013; Hall & Goetz, 2013).

A possible reason for under-emphasizing metamotivational factors in self-regulated learning lies in the definitional fuzziness and componential structure of motivation in addition to the disciplinary and contextual differences affecting motivational processing. For example, in positivist theories, often referred to as drive-reduction theories, motivation is defined in terms of human needs, be they biological, physical, intellectual, or spiritual, which cause tension that has to be released. Maslow's pyramid of needs (cited in Daniels, 2005) and Atikson's achievement motivation (cited in Williams & Burden, 1997) are examples of such theories.

Cognitive theorists, on the other hand, define motivation in terms of individuals' choices in making decisions about their own actions as opposed to being at the mercy of external forces over which they have no control. They attempt to explain outcomes such as students' choice of activities, the intensity of their effort or the level of their cognitive engagement within those activities (Wolters, 2003). Emphasis has been directed to such motivational constructs as task value, expectancy of success, self-efficacy beliefs (Wigfield & Eccles, 2002; Pintrich, 2003; Schunk et al, 2008; Stolp & Zubrucky, 2009), goal setting and goal orientations (Locke & Latham, 2002; Pagliaro, 2002; Boekaerts, De Koning & Vedder, 2006), task motivation (Kanfer & Acherman, 2004)), and attributions (Weiner, 1986; Williams & Burden, 1997; Dornyei, 2003).

The motivational picture in foreign language settings seems more blurred as the existing models of language motivation are inadequate for explaining and regulating students' motivational processing. For example, Gardner's model (1985, 2000) sees motivation as a combination of "effort" and "desire" to achieve the goals of learning the target language in addition to "favorable attitudes" towards learning that language. Two types of motivation are included here: instrumental motivation, referring to functional reasons for learning a given foreign language, and integrative motivation, referring to learners' desire to communicate or integrate with members of the target language. Gardner (2000) coined the term "integrativeness" to refer to interest in learning a foreign language in order to become closer to the L2 community. The model

does not provide enough clues on motivational processing and how one can regulate or control his motivational states.

Schumann's acculturation model (cited in Johnson, 2001) carries a similar view regarding the functions of target language that have a direct bearing on one's motivation to learn and achieve. He distinguishes between communicative and integrative functions of language learning with the former referring to students learning the target language to the level that enables them to perform simple "transactions of information" and the latter referring to learners' desire to "acculturate" –become part of the target language culture. Schumann sees that EFL students' motivation depends on the degree to which they wish to acculturate to the foreign language society. Learners with stronger desire to acculturate are more likely to develop higher levels of motivation to study and perform better in FL learning and thus exhibit less fossilization in foreign language settings. It should be stressed here that these models of motivation propose constructs that are different from the ones prevailing in mainstream motivation literature and are less likely to develop into self-regulatory mechanisms of language motivational processing.

The emergence of the process approach to motivation offered a fruitful way to interpreting and integrating these manifold motivational constructs into one temporal framework and thus laid the basis for motivational regulation. Dornyei and Otto's (1998) model, originally developed within the field of second language education, is an example of this approach. In addition to emphasis on the choice motivation much studied in past research, Dornyei and Otto emphasized the volitional motivation associated with long-lasting educational goals such as mastering languages.

The first phase of the model focuses on "choice motivation" including goal setting, intention formation, and the initiation of intention enactment. In the second phase, "choice motivation" is replaced by "executive motivation" whereby emphasis shifts from deliberations and decision making to the implementation of action. This encompasses three basic processes, including sub-task generation and implementation, a complex ongoing appraisal

process, and the application of a variety of action control mechanisms.

The post-actional phase begins after the action has been terminated or it can take place if the action is interrupted for a long period. The main processes during this phase include evaluating the accomplished action outcome and contemplating possible inferences to be drawn for future actions. During this phase, the student compares the initial expectancies and plans of action to how they turned out in reality and forms causal attributions about the extent the intended goal has been achieved (Dornyei & Otto, 1998; Dornyei, 2000).

In counseling psychology and psychotherapeutic settings, another significant line of research on metamotivational regulation has been initiated. Unlike the above-mentioned models and approaches that focus mostly on intrinsic motivation, this line of research focuses on the regulation of extrinsically motivated behaviors. Two significant theories have emerged in this regard, including self-determination theory (SDT) and reversal theory (RT). The former builds on the idea of transforming externally regulated behavior into internally regulated one. According to Gagne and Deci (2005:334-335), this includes three different processes: introjection, identification, and integration. Introjected regulation is the regulation that has been taken in by a person but has not been accepted as his or her own. Here, the regulation is within the person but is a relatively controlled form of extrinsic motivation.

In identified regulation, people identify with the value of a behavior for their own selected goals, and thus feel greater freedom and volition because the behavior is more congruent with their personal goals and identities. In integrated regulation people have a full sense that the behavior is an integral part of who they are, that it emanates from their sense of self, and is thus self-determined. Integrated regulation represents the most developmentally advanced form of extrinsic motivation, and shares some qualities of the other type of autonomous motivation; namely, intrinsic motivation (albeit it does not turn into intrinsic motivation).

While other theories of external and internal motivation view regulation as a dichotomy, self-determination theory posits a controlled-to-autonomous continuum to describe the degree to which an external regulation has been internalized. It posits a self-determination continuum ranging from amotivation, which is wholly lacking in self-determination, to intrinsic motivation, which is invariantly self-determined. Between amotivation and intrinsic motivation are the four types of extrinsic motivation, with external being the most controlled and Introjected, identified, and integrated regulation being the progressively more self-determined types.

The Reversal Theory of meta-motivational regulation, on the other hand, focuses on ways and techniques of manipulating individuals' "motivational states" (Apter, 2007; Desselle, & Apter, 2013; Apter, 2013). It views human experience as structurally organized into meta-motivational domains, each consisting of two opposite values or motives so that only one of each pair can be experienced in any given moment (Apter, 2007). So far four domains have been identified, including ends-means, rules, transactions, and relationships (Desselle, & Apter, 2013; Apter, 2013).

The two states in the means-ends domain are called telic (serious) and para-telic (playful) and refer to whether one is motivated by achievement and future goals, or the enjoyment of the process in the moment. The "rules" domain includes two states called "conforming" and "rebellious", referring to whether one enjoys operating within rules and expectations, or wishes to be free and pushes against these structures. The "Transactions" domain includes two states called "mastery" and "sympathy", referring to whether one is motivated by transacting power and control, or by care and compassion. The fourth domain, "relationships", includes two states called autic (self) and alloic (other), referring to whether one is motivated by self-interests (personal accountability and responsibility) or by the interest of others (altruism and transcendence).

The key word in the Reversal Theory is "motivational states" (compared to traits in other motivational theories). Looking at motivation as a state gives a sounder basis for motivational

processing and thus motivational self-regulation. Motivating learners requires that teachers avail rich classroom environments in which learners can experience and manipulate different motivational states. Quoting Apter's (2005) words, "the productive advising environment is one characterized by 'meta-motivational richness', referring to an environment in which all eight states and their satisfactions are available so that students find satisfaction in whatever state of mind they happen to be experiencing" (P. 37). Demotivated learners can be trained in self-regulating their motivation by inducing reversals between pairs of motivational states based on the learning conditions and the requirements of the learning tasks/activities. Several techniques have been proposed to induce reversals including (1) direction situational change, special displays, reframing, simulation, self-conditioning, and imaging (Kerr & Tacon, 2000; Apter, 2001; Ellis, 2008; Reese & Apter, 2011).

1.3 Need for integration

It is clear from the literature surveyed above that there is a need for integrating these lines of research and instructional interventions in normal classroom settings. Although research on meta-motivational reversals and self-determination has retriggered interest in metamotivational regulation, it is still in its infancy with most interventions being confined to clinical and psychotherapeutic settings or/and still focusing on the identification, measurement, or correlational investigation of motivational states/components. Regulating these motivational states in normal classroom settings with large groups of learners is still an under-researched area heretofore.

Moreover, as stated by Wolters (2011), the use of motivational strategies varies as a function of academic tasks, contexts, and content fields. Unlike other disciplines or fields of study, foreign language learning is not context-general or socio-culturally neutral, which in turn necessitates that motivational regulation be studied within the cultural norms and actual practices of these contexts. Most importantly, as indicated in the literature surveyed above, a growing discontent has been voiced by many researchers and

educators that the two most basic components of self-regulated learning, meta-motivation and metacognition, have heretofore been studied in isolation from one another.

To this end, the current study attempts to integrate these two components, metamotivation and metacognition, in one instructional intervention and studying the immediate and delayed impact on EFL at-risk students' strategy use and academic achievement. Four research questions are handled:

- Is there any immediate impact of metamotivational self-regulation on at-risk EFL students' language learning strategy use?
- Is there any immediate impact of metamotivational self-regulation on at-risk EFL students' academic achievement?
- Is there any delayed impact of metamotivational self-regulation on at-risk EFL students' language learning strategy use?
- Is there any delayed impact of metamotivational self-regulation on at-risk EFL students' and academic achievement?

2. METHOD

2.1 Participants

The study is interested in at-risk language learners, those exhibiting underachievement in language learning settings, having poor academic standing, and showing less likelihood of functioning properly in language situations. The Participants of the study were 67 at-risk EFL students on Alain campus of Abu Dhabi University, (ADU), UAE. According to ADU policy, at risk-students are the ones with poor academic standing and CGPAs below 2.5 (out of 4). Those students were not allowed to take the regular course load as others did (12-18 CHs per semester) and were forced to repeat courses with letter grades lower than "C". Due to repeated failure and inability to improve academic standing, some at-risk students were often dismissed from the university. The Participants of the study were all female students as the BA-in-English program in ADU admits female applicants only. As ADU is an international language learning context, the sample of the study included students from

different countries such as Emirates, Sultanate of Oman, Jordan, Lebanon, Egypt, Syria, India, Iran, Sudan, Somalia, and Pakistan.

2.2 Design of the Study

The quasi-experimental design was employed in this instructional intervention. Students were randomly assigned to an experimental group (N= 34) or a control group ((N = 33). The control group students received metacognitive self-regulation procedures while the experimental group students received meta-motivational self-regulation in addition to the metacognitive self-regulation component. By the end of instructional intervention, both groups were post-assessed twice: once right after the conclusion of the instructional intervention to judge its immediate impact and another time six months later to investigate the delayed impact of the intervention. The post-assessments focused on two variables, including language learning strategy use and academic achievement. While students' academic achievement was assessed using their Cumulative Grade Point Averages (CGPAs), a Learning Strategies Inventory (LSI) was developed to assess their ability to deploy learning strategies in foreign language education settings.

2.3 Instrumentation

Language strategy use was assessed through a Language Learning Strategy Inventory (LLSI). Development of this inventory was based Pintrich and Colleagues' (1991) Motivated Strategies for Learning Questionnaire (MSLQ) and Oxford's (1995) Strategy Inventory for Language Learning (SILL). The preliminary inventory included 55 Likert scale type items with 5-point rating ranging from Totally Agree (5) to Totally Disagree (1) to statements describing learning strategies commonly used in foreign/second language learning contexts. It was validated on 258 EFL students at the tertiary level to test its factorial structure and item loadings. A confirmatory factor analysis with principal component and Varimax rotation was performed to decide on the interrelationships among items and their corresponding factors. Eigen values of ≥ 1 and item loading minimum of (0.5) were used as criteria for the factor analysis. Items that loaded on more than one factor or that had

loadings less than (0.5) were removed and the matrix was recalculated. As a result, 15 items were removed from the preliminary form of the inventory.

Thus, the final form of the Language Learning Strategies Inventory included 40 items classified under seven pivots of learning strategies. The first four pivots (5 items each) pertain to cognitive learning strategies that are deployable for handling the object level of language learning, encompassing rehearsal, organization, elaboration, and critical thinking. The fifth pivot, meta-cognitive strategies (6 items), includes strategies aiming at controlling, guiding, and orchestrating cognitive strategies. The sixth pivot, social strategies (7 items), includes strategies dealing with getting involved and contributing to effective group dynamics. The seventh pivot (7 items) includes affective strategies pertaining to self-encouragement, self-reward, and lowering anxiety in foreign language learning situations.

2.4 Training procedures

In an instructional intervention that lasted for four months in the second semester of the academic year 2009-2010, the participants were randomly assigned to an experimental group or a control group condition. The control group students received training in metacognitive self-regulation following the stages of self-regulatory skills suggested by Pintrich (2000). These included metacognitive activation and planning, metacognitive monitoring and control, and metacognitive reflection and attribution. Students received training in a wide array of cognitive strategies including rehearsal, organization, elaboration, and critical thinking.

While the control group students received training in metacognitive self-regulation procedures only as outlined above, the experimental group students received similar metacognitive self-regulation training in addition to training in metamotivational self-regulation. The metamotivational self-regulation intervention focused on three basic phases, including motivational activation and planning, motivational monitoring and control, and motivational reflection and attribution.

The first phase, motivational activation and planning, focused on goal setting and goal orientation adoption, use of self-enhancement mechanisms such as positive self-talk, goal-oriented self-talk, adaptive self-efficacy judgments, and self-consequation techniques. The second phase, motivational monitoring and control, focused on helping students monitor their metamotivational states and adapt them to the learning conditions and the requirements of language tasks at hand. This included training them in task-decomposition and proximal goal setting, environment structuring, emotion regulation, metamotivational reversal mechanisms, and motivational monitoring via motivational logs. The third phase, motivational reflection and attribution, focused on training students in using attributional control strategies, motivational reflection, and further motivational planning.

The instructional intervention included both group sessions and individualized instruction/counseling sessions. Group sessions focused on providing learners with background knowledge about the motivational components, processes, and strategies under consideration. The individualized sessions focused on differentiating treatments based on individual needs and motivational states/profiles of the participants.

Individual students were asked to keep reflective logs describing their motivational states on a daily basis to see whether these states were productive or counterproductive. They were then guided to work out ways to reverse unproductive motivational states into productive ones based on the principles of the Reversal Theory (Apter, 2013). Individual sessions with the instructor were scheduled for follow-up and counseling. These focused on negotiating alternative action sequences with individual students in case disparity existed between the desired outcomes and the currently followed action sequences.

3. RESULTS

Upon conclusion of the instructional intervention, students in both groups were post-tested twice. The first was right after the conclusion of the intervention to decide on its immediate impact on

at-risk students' language strategy use and academic achievement and the other was six months later (by the end of the subsequent semester) to study its delayed impact. Students' scores on the immediate and the delayed post-assessments of these two variables were statistically treated using the Statistical Package for Social Sciences (SPSS, Version 19) as detailed below.

3.1 Immediate impact

For answering the first two questions regarding the immediate impact of enhancing metamotivational self-regulation of at-risk EFL students on their language strategy use and academic achievement, the mean scores of the experimental group students who received training in meta-motivational self-regulation along with meta-cognitive self-regulation were compared to those of the control group students who received training in metacognitive self-regulation only. ANOVA procedures were used to test differences between mean scores. Details about the immediate impact of the instructional intervention on students' language strategy use are outlined in Table (1).

Table (1): ANOVA results of the immediate post-assessment of the students' language strategy use

	Mean scores	Sum of Squares	df	Mean Square	F-value	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Between Groups	3.7640	2.745	1	2.745	23.855	3.6357	3.8922
Within Groups	3.3591	7.480	65	.115		3.2501	3.4681
Total	3.5646	10.225	66			3.4685	3.6606

As indicated by data in the above-table, enhancing the metamotivational self-regulation of at-risk EFL students led to better gains in the immediate post-assessment of their ability to deploy various types of strategies in language learning settings. As shown by ANOVA results, a statistically significant difference does exist between mean scores of the experimental group students and their control group peers in their language strategy use { $F(1, 65) = 23.855, P < .01$ }. This significant statistical difference is in favor of the experimental group students who received training in metamotivational self-regulation along with metacognitive self-regulation.

The experimental group students outperformed their control peers in using language learning strategies along the seven pivots of the strategy inventory. As their responses to items of the inventory indicate they showed more skillfulness in deploying a wide array of strategies whether at the object level or the meta-level of language processing. At the object level of processing, they showed more skillfulness in rehearsing and recalling language content, organizing this content in more meaningful ways, expanding and extending studied content to subsequent language learning tasks, and handling language tasks with a more critical eye.

Moreover, they showed more skillfulness in monitoring, coordinating, and orchestrating these object level strategies – rehearsal, organization, elaboration, and critical thinking—via activating metacognitive monitoring, control, and reflection mechanisms. More importantly, as their responses to items of the inventory indicate, they showed more skillfulness in deploying a wide array of social and affective strategies in language learning settings. They outperformed their control peers in getting involved in social interactions using the target language and in contributing more effectively to group dynamics. As well, they showed more skillfulness in lowering their anxiety in language settings, self-encouraging when facing difficulties, and reinforcing successful learning via self-reward mechanisms.

As well, enhancing the at-risk EFL students' metamotivational self-regulatory skills seems to have had an immediate impact on their academic achievement in foreign language learning settings. Table (2) outlines results of the ANOVA study of the differences between mean scores of the experimental group students and their control peers.

Table (2): ANOVA results of the immediate post-assessment of the students' academic achievement

	Mean scores	Sum of Squares	df	Mean Square	F-value	Sig.	95% Confidence Interval for Mean	
							Lower Bound	Upper Bound
Between Groups	1.9903	1.333	1	1.333	37.457	.000	1.9229	2.0577
Within Groups	2.2724	2.313	65	.036			2.2073	2.3376
Total	2.1293	3.646	66				2.0719	2.1866

As indicated by data in Table (2), higher gains in academic achievement have been attained by the at-risk EFL students as a result of enhancing their meta-motivational self-regulation. The experimental group students achieved higher than their control peers in terms of their cumulative grade point averages (CGPAs). As shown by ANOVA results, a statistically significant difference does exist between mean scores of the two groups in their overall

academic achievement in language classes { $F(1, 66) = 37.457, P < .01$ }. This significant statistical difference is in favor of the experimental group students who received training in metamotivational self-regulation along with metacognitive self-regulation. This in turn indicates that metacognitive self-regulation is not enough by itself to enhance students' overall academic achievement in language settings. Pairing metacognitive self-regulation with self-regulation of metamotivational states and processes is more likely to bring about higher levels of academic achievement.

3.2 Delayed Impact

Six months after the conclusion of the instructional intervention (by the end of the subsequent semester), both groups were post-assessed again to decide on the delayed impact of metamotivational self-regulation on their leaning strategy use and academic achievement. Results about the delayed impact of the intervention on language learning strategy use are tabulated in Table (2).

Table (3): ANOVA results of the delayed post-assessment of the students' language strategy use

	Mean scores	Sum of Squares	df	Mean Square	F value	Sig	95% Confidence Interval for Mean	
							Lower Bound	Upper Bound
Between Groups	3.7640	4.415	1	4.415	51.811	.000	3.6357	3.8922
Within Groups	3.3591	5.539	65	.085			3.2501	3.4681
Total	3.5646	9.955	66				3.4685	3.6606

As indicated by data in the above-table, enhancing the metamotivational self-regulation of at-risk EFL students led to better gains in the delayed post-assessment of both their language strategy use and academic achievement. As shown by ANOVA results, a statistically significant difference does exist between mean scores of the two groups on the delayed post-assessment of their

language learning strategy use { $F(1, 65) = 51.811, P < .01$ } favoring the experimental group students. The experimental group students outperformed their control peers in utilizing these strategies in language learning settings. These differences cover the seven pivots of the strategy inventory including rehearsal, organization, elaboration, critical thinking, metacognitive, social, and affective strategies.

As the delayed impact is concerned with the long-term effects and the transfer of learning, it seems that strategy deployment and transferability to subsequent learning experiences need a sort of driving force to energize learners and make them persist and exert effort in language situations. The experimental group students' experience in metamotivational self-regulation seems to have enhanced their (meta)cognitive functioning and thus helped transfer the learnt skills/strategies to subsequent language use situations. More importantly, it seems that they became better manipulators of their motivational states in the sense used in the Reversal Theory and thus managed to maintain higher levels of motivation and perseverance necessary for better functioning in subsequent language situations.

Likewise, enhancing EFL at-risk students' metamotivational self-regulation had a delayed impact on their overall academic achievement in language classes measured in terms of their cumulative grade point averages (CGPAs). ANOVA results are shown in Table (4).

Table (4): ANOVA results of the delayed post-assessment of the students' academic achievement

	Mean scores	Sum of Squares	df	Mean Square	F value	Sig.	95% Confidence Interval for Mean	
							Lower Bound	Upper Bound
Between Groups	1.9903	1.841	1	1.841	55.950	.000	1.9229	2.0577
Within Groups	2.2724	2.138	65	.033			2.2073	2.3376
Total	2.1293	3.979	66				2.0719	2.1866

As indicated by ANOVA results, a statistically significant difference between mean scores of the two groups does exist { $F(1, 66) = 55.950, P < .01$ }. This statistically significant difference is in favor of the experimental group students who received training in metamotivational self-regulation along with metacognitive self-regulation. They were able to achieve higher gains in language learning settings. Contrariwise, the control group students who did not receive training in metamotivational self-regulation seem to have lost their drive gradually and become subsumed in their less adaptive motivational frameworks. These maladaptive motivational frameworks and counterproductive metamotivational states seem to have negatively affected their overall academic achievement.

Their academic achievement as well as their language learning strategy use seem to have fossilized at the training exit level and have not witnessed much improvement during the time interval between the immediate post-assessment and the delayed post-assessment of their language learning strategy use and academic achievement. Metamotivational self-regulation training seems to have impacted these strategies more effectively through enhancing students' willingness to exert more effort and show more persistence in their striving, something that metacognitive regulation alone seems less likely to develop.

4. DISCUSSION

Results of the current study carry evidence regarding the significant impact that metamotivational self-regulation is likely to have on the at-risk students' functioning in language settings. It seems that these learners suffered motivational deficits that affected negatively their academic performance and their ability to deploy and maintain different types of learning strategies needed for effective foreign language learning. Rectifying their motivational dysfunction resulted in better deployment of not only cognitive and metacognitive strategies, but also other types of strategies deemed instrumental for language learning such as the social and affective strategies. These two types of strategies are of critical significance for foreign language learning that, unlike other disciplines or fields

of study, depends heavily on using language in social contexts. This is consistent with research literature showing significant relationships between students' use of these language learning strategies and higher language proficiency as well as enhanced language learning (Lee, 2010).

It is also clear from the results of the study that a merely cognitive or metacognitive approach to self-regulation is not adequate for unleashing students' full potentials and helping them overcome their underachievement and dysfunction in educational settings. The experimental group students who integrated metamotivational and metacognitive regulation outperformed their control peers who depended only on metacognitive self-regulation.

These results provide empirical support to recent calls in self-regulated learning literature for better integration of metamotivational and metacognitive components to induce more effective learning environments (Wolters, 2003; Zhang & Tai, 2004; Meyer & Tuner, 2006; Desselle, 2009; Theys & Desselle, 2013). Metacognitive self-regulation is not adequate by itself to establish such environments. Interweaving metacognitive and metamotivational aspects, as Du Boulay et al (2010) state, would help produce more effective learning behaviors.

Another significant conclusion in the current study concerns the lasting impact of metamotivational self-regulation on strategy maintenance and transfer. Results of the delayed post-assessment indicate that the transfer of learning is enhanced when metacognitive self-regulation is integrated with metamotivational regulation. The control group students who received training in metacognitive self-regulation alone could not maintain and consolidate strategy use on the long-run and finally reverted to old maladaptive motivational frameworks that affected their cognitive and metacognitive processing negatively. Reframing the motivational frameworks of at-risk students and enhancing their metamotivational self-regulatory skills led to long-lasting impact on their strategy use and transfer, which in turn enhanced their overall academic achievement.

A closer look at the difference between the mean scores of students in the immediate post-assessment and the delayed post-assessment of both their strategy use and academic achievement indicates that in the course of time the differences between the mean scores of the two groups get bigger. On the long run, the experimental group students outperformed their control peers and showed more cumulative success in both strategy use and overall academic achievement. Here comes the effect of metamotivational aspects of training. It seems that motivational regulation has snowballing effects on students' performance.

Metamotivational self-regulation led to more success, which, in turn, seems to have a boomerang effect on students' motivation, a reciprocal cycle of reinforcement between ensuing success and learning motivation. The control group students who did not receive metamotivational self-regulation training lost their enthusiasm on the long, whereas their experimental peers continued striving and showed more persistence to succeed and functionalize their learnt strategies in subsequent language learning. This, in turn, was reflected on their academic achievement in terms of continued growth in their CGPAs.

These results empirically support arguments of self-regulated learning researchers that metacognitive and metamotivational components of self-regulated learning reciprocally enhance each other. For example, Wolters (2003) argues that the regulation of cognition (metacognition) and the regulation of motivation (metamotivation) are complementary; though they work towards different goals. As Wolters stated, "While the regulation of cognition is primarily responsible for students' effective use of strategies, the regulation of motivation is mostly responsible for ensuring that students maintain the necessary motivation to complete the task" (P.190).

According to Dornye (2000,) motivation is responsible for how long students can sustain the activity and how hard they are going to pursue it. This, in turn, helps students accumulate adaptive attributional experience and develop their internal standards and their own repertoire of action-specific strategies. Ryan et al (2011)

see that positive and lasting results occur when students become actively engaged and personally interested in learning.

5. IMPLICATIONS

The results of the study as outlined herewith have a number of implications for foreign language education as well as education of other disciplines. The first of these implication relates to the identification of at-risk students. More often than not, at-risk students are identified based on their cognitive profiles and cognitive achievement. As those students, based on the results of the current study, have other problems than cognitive dysfunction, the identification process should not be based on merely cognitive processing. Motivational aspects and problems should be taken into account as well. As literature indicates (Wolters, 2011; (Du Boulay et al, 2010: 212), students' lack of motivation is sometimes misinterpreted as lack of ability.

This identification process and criteria thereof are not isolated from the instructional treatment required by EFL students in general and at-risk students in particular. Most classroom instructional practices and assessment procedures thereof target the cognitive or metacognitive abilities of learners with little attention -- if any-- to motivational aspects or metamotivational management. Striking a balance between metacognitive and metamotivational regulation in language learning settings is more likely to pay off on the long run than merely accenting either component alone. Results of the current study in this regard are consistent with current calls in existing literature for integrating metacognitive and metamotivational components of self-regulated learning ((Dornyie, 2005; Meyer & Tuner, 2006; D'Mello et al., 2008; Desselle, 2009; Theys & Desselle, 2013; Hall & Goetz, 2013).

Implications also extend to how EFL teachers can establish effective language learning environments. Based on the results of the current study, effective classroom atmospheres are these providing for motivational richness. Motivational richness is here understood in terms of providing a variety of techniques and activities to satisfy the different metamotivational states learners as outlined by Apter

(2013; 2005). This, as Apter (2005) states requires that teachers avail rich classroom environments "which all eight states and their satisfactions are available so that students find satisfaction in whatever state of mind they happen to be experiencing" (P. 37).

This motivational richness, in turn, is more likely to affect not only students' cognitive processing and their enjoyment in language settings, but also their abilities to transfer learning strategies and tactics to subsequent situations. Based on the results of the current study, at-risk students who managed to self-regulate their motivation became more efficient in maintaining their strategy use on the long run, show more persistence and perseverance in challenging learning conditions, and deploy higher level strategies to handle language learning situations. Should successful transfer of learning be the target in foreign language settings, teachers should give due attention to motivational factors the same way they do with cognitive factors.

6. SUGGESTIONS FOR FURTHER RESEARCH

The current study attempted to fill in a gap in the existing empirical self-regulated language research literature regarding integrating metamotivational and metacognitive components of self-regulation. In addition to the implications it has for foreign language instruction, it raises a set of issues that need due attention in future research endeavors.

First of all, with the paucity of empirical studies on metamotivational self-regulation, the current study attempted to integrate models of motivational regulation such as the Reversal Theory and Self-determination Theory with the mainstream models of self-regulated learning. As these theories of motivation are still confined to clinical and psychotherapeutic settings with very scanty empirical applications in normal classrooms with large groups of learners, future research on self-regulated learning needs to experiment with other ways of integrating metacognitive and metamotivational components for different groups of learners so that a more pragmatic and education-centered approach to metamotivational self-regulation be in place.

Another area that needs further research is metamotivational self-regulation in EFL settings. Most existing models of motivation and motivational regulation focus on contexts where language is used as a first language. These models are not adequate to adequately explain the regulation of language motivation in EFL settings. Moreover, existing literature on language motivation refers to general frameworks of variables and factors affecting students' motivation. Yet, these remain just frameworks that provide no instructional advice on how motivational processing occurs in language settings. Language-specific models of self-regulated learning tapping componential structure and processing mechanisms need further investigation in future foreign language motivation research.

Research has provided evidence regarding the cultural influences of motivation (Dornyei, 1998; Watkins et al., 2002). Unlike other content fields of study such as math and science, language learning is not socio-culturally neutral since, as Dornyei (1998) states, "the motivational basis of language attainment involves the development of L2 identity and the incorporation of elements from the L2 culture" (P. 118). Transferability of motivational processing mechanisms across different cultural contexts and different language learning settings needs further investigation in future research.

Finally, due to some delimitations in the current study, further research needs to handle some issues before generalizing results and conclusions hereof. The first of these issues is that the sample of the current study involved female students only. As research literature carries evidence regarding differences between male and female students in language contexts (Dornyei, 2000; Nyikos, 2008; Byram & Hu, 2013), further research is needed for any potential differences in metamotivational self-regulation between the two genders.

Another area of research that needs further attention stems from delimitations of the current study in terms of using self-report protocols to study language learning strategies. Future research needs to consider other ways of tapping task-specific strategies in actual language learning settings.

Finally, the current study focused on tertiary settings of EFL instruction characterized by variety, flexibility, choice, and student maturity in terms of expertise and overall knowledge base. Replication of the instructional intervention and further research on the regulation of motivation at lower levels of foreign language education are all potential issues for further research.

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